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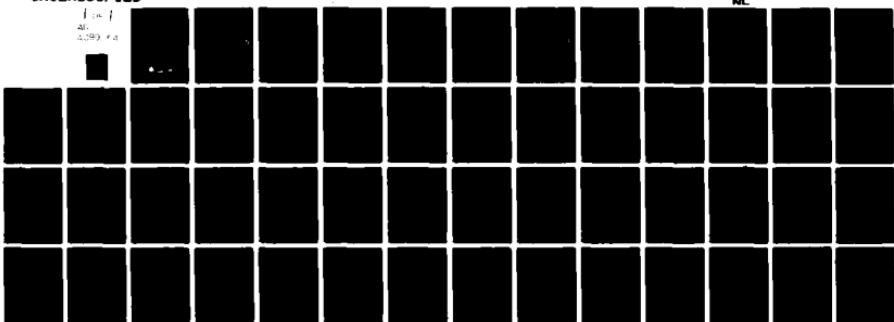
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MEDICAL SERVICES ANNUAL HISTORICAL REPORT - AMEDD ACTIVITIES, C-ETC(IU)  
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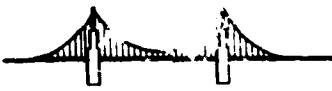
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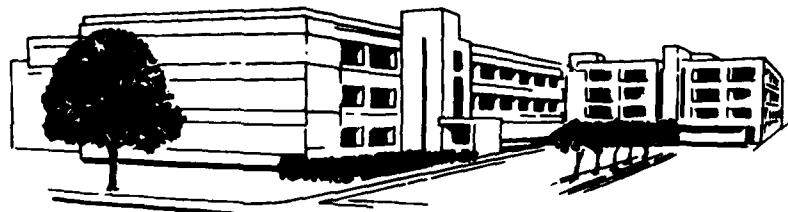
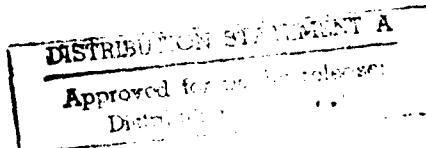
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## MEDICAL SERVICES ANNUAL HISTORICAL REPORT-AMEDD ACTIVITIES

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MEDICAL SERVICES

ANNUAL HISTORICAL REPORT - AMEDD ACTIVITIES

Reports Control Symbol MED-41 (R4)

LETTERMAN ARMY INSTITUTE OF RESEARCH

PRESIDIO OF SAN FRANCISCO

CALIFORNIA 94129



CALENDAR YEAR 1980

*John D. Marshall Jr.*  
JOHN D. MARSHALL, JR.  
Colonel, MS  
Commanding

*Helmut F. Hacker*  
HELMUT F. HACKER  
Lieutenant Colonel, MS  
Executive Officer

DISP'D	RECD BY
Approved	Initials
Initials	Date

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LAIR

(Partial)

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### SECTION I - MISSION

The Letterman Army Institute of Research (LAIR) is a Class II Activity under the jurisdiction of the U.S. Army Medical Research and Development Command, Fort Detrick, Frederick, MD with station at the Presidio of San Francisco, CA.

The mission of the Institute is to provide a general military medical research capability and conduct research in the areas of dermal protection against biological, chemical, and radiological hazards; battlefield casualty management; effects of military lasers; experimental psychology; military trauma and resuscitation; blood preservation; chronic mammalian toxicology; and, within available resources and capabilities, to support clinical investigation projects recommended by the Commanding General, Letterman Army Medical Center (LAMC). The Institute also performs other medical research activities as directed by the Commanding General, U.S. Army Medical Research and Development Command.

### SECTION II - ORGANIZATION

1. LAIR contains five research divisions and four administrative support elements. These divisions are in turn organized into functions by separate groups. The LAIR organization chart is on page 4.
2. With the departure of the accounting function, the Resources Management Group has been reduced by one position, an accounting clerk, and the position of Accounting Supervisor has been altered to eliminate the supervisorial function.
3. The Information Sciences Group's support functions were continued under the team concept with the Biometrics Team (Statistics), the Technology Team, and the Applications Team. A new team, the Administrative Programming Team (APT) was established. The team structure improved the esprit de corps and provided for faster turn-around on projects.
4. The hemoglobin solutions as resuscitation fluids project is being extensively revised to focus the efforts toward clinical products development. This effort is a multi-disciplinary approach and requires a total revision of existing protocols. These revisions are being made in consultation with experts in drug development, Bureau of Biologics, and Institute-wide consultants. In addition, a pharmacologist with expertise in pharmacokinetics has been recruited into the division to work with the investigators.
5. As the result of the transfer of the nutrition and food wholesomeness program to the U. S. Department of Agriculture (USDA), the Division of Nutrition Technology was dissolved. A Toxicology Group was established under the Division of Research Support to assume the toxicology research and testing mission.

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6. The Animal Resources Group had one 91T animal care specialist position deleted from the TDA as a result of the January 1980 Manpower Survey. This reduced the Group's authorized strength to twenty-five. Currently there are sixteen people assigned. The group had five 91T military and four WG-05 civilian positions vacant at the end of the reporting period.

7. The Radioisotope Services Group requested and received an 01H slot authorization for a laboratory technician to assist the Chief, Radioisotope Services Group in laboratory research.

8. The Operating Room Services Group was transferred from the Division of Surgery to the Division of Research Support on 7 Apr 80. A recommendation for this transfer was made by the 1980 Manpower Survey since the Operating Room Services Group was actually a support group to be used by all divisions at LAIR.

### SECTION III - PERSONNEL AND ADMINISTRATION

#### 1. Personnel strength as of 31 December 1980:

<u>OFFICERS</u>	<u>REQUIRED</u>	<u>AUTHORIZED</u>	<u>ACTUAL</u>
MC	13	14	11
VC	11	10	10
MS	<u>28</u>	<u>21</u>	<u>22</u>
Subtotal	52	45	43
<u>Enlisted</u>	119	113	101
<u>Civilian</u> (FTP) (Temp)	129	105	97 5
Total	300	263	246

#### 2. During reporting period, key positions were staffed as follows:

<u>POSITION</u>	<u>INCUMBENT</u>
Commander & Director	John D. Marshall, Jr., COL, MS
Deputy Commander	Louis Hagler, COL, MC
Executive Officer	Helmut F. Hacker, LTC, MS
Toxicology Project Officer	Alfred M. Allen, COL, MC
Assistant Director for Research Contract Management	J. Ryan Neville, Ph.D., DAC, GS-14
Quality Assurance Officer	John L. Szurek, MAJ, MS

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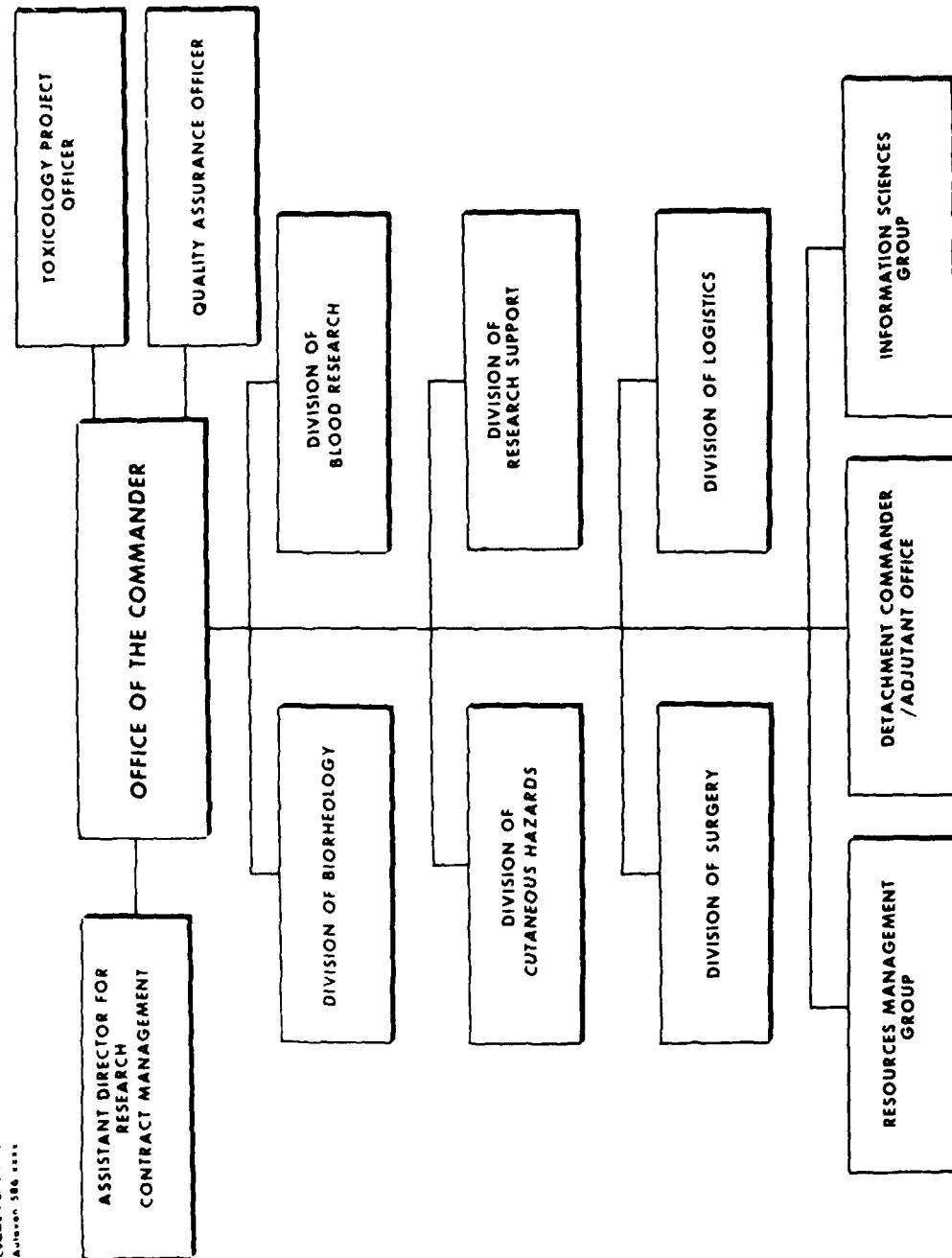
<u>POSITION</u>	<u>INCUMBENT</u>
Detachment Commander/Adjutant	Margaret M. Kulczyk, CPT, MS
C, Resources Management Group	Gary L. Bennett, MAJ, MS
C, Information Sciences Group	Raymond W. Serenbetz, CPT, MS
C, Division of Biomechanics	Edwin S. Beatrice, COL, MC
C, Division of Cutaneous Hazards	George H. G. Eisenberg, Jr., MAJ, MS
C, Division of Surgery	Ronald F. Bellamy, COL, MC (1 Jan-30 Mar 80, 26-31 Dec 80)
	Robert H. Herman, COL, MC (31 Mar-25 Dec 80)
C, Division of Blood Research	Robert B. Belin, LTC, MC
C, Division of Research Support	Paul B. Jennings, Jr., LTC, VC
C, Division of Logistics	Michael H. Todd, MAJ, MS
C, Medical Laboratory NCO/ First Sergeant	James H. Judkins, 1SG

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*John H. Marshall Jr.*

APPROVED  
JOHN MARSHALL, JR  
Colonel MS  
Commanding  
24 July 80  
DATE



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3. The calendar year ended with the sudden death of COL Robert H. Herman, MC, Chief, Division of Surgery, on Christmas Day 1980. COL Herman was a scientist and physician known throughout the international scientific community for his work in nutrition and metabolism. COL Herman was originally assigned to LAIR in April 1974 when the U.S. Army Medical Research and Nutrition Laboratory was moved from Fitzsimmons Army Medical Center, Denver, CO to the Presidio. He became Chief, Department of Medicine, LAIR. In April 1979, COL Herman was transferred to the Letterman Army Medical Center when the function of the service was also transferred. He was reassigned to LAIR on 31 Mar 80 when he assumed duties as Chief, Division of Surgery.
4. A new position was recognized and authorized within the Command Group. In July 1980, COL Alfred M. Allen, MC, assumed duties as the Toxicology Project Officer to provide expert advice and assistance to the Commander, LAIR, and the Commanding General, U.S. Army Medical Research and Development Command concerning planning operations for a Government-Owned-Contractor Operated (GOCO) Toxicology program in support the Department of the Army.
5. Effective 6 Apr 80, the mission of the Division of Nutrition Technology was transferred to USDA. This resulted in the loss of 14 military and 10 civilian authorizations. Eleven mobilization designee positions were also abolished with the transfer of function.
6. Twenty-eight mobilization designee positions were authorized with thirteen positions filled during the calendar year. Fifteen mobilization designees performed their annual training (AT) at LAIR during the reporting period.
7. During the reporting period, an active and aggressive recruitment program for Biological Science Assistants, MOS 01H, was initiated. SFC J.S. Surinchak, Division of Surgery, was appointed the 01H Recruitment Coordinator for LAIR. Through the exchange of information and visits to numerous colleges and universities and coordination with US Army Recruiters, LAIR was able to fill almost 100% of the authorizations for 01H personnel. This positive approach to the recruitment of 01Hs has contributed to the resolution of critical personnel shortages in MOS 01H.
8. Inadequate personnel resources in the Medical Audio-Visual Office in the area of clerical support has continued to reduce the capability of the activity. The lack of clerical support to accomplish routine clerical requirements reduces the photographic personnel strength from two to one.
9. On 1 Apr 80, D.M. MacCallum, DAC, GS-08, was replaced by B.J. Kious, DAC, GS-08, as Accounting Supervisor, and on 26 Dec 80 A. Parvin, DAC, GS-09, departed the position Management Analyst, Resources Management Group.
10. V.A. Wilhelm, DAC, GS-11, Program Analyst, was assigned to the Research Contract Management Office in June 1980.

11. Personnel leaving the Information Sciences Group were: SP5 N. Schweim, Programmer, and F.P. Hill, DAC, GS-05, Computer Aid. S.B. Brickett, DAC, GS-05, Computer Aid/Operator arrived. SP5 R.L. Thaning was assigned to the Applications Team as a programmer. M.A. Nasr, DAC, GS-09, Programmer, received permanent status, and the position Administrative Clerk, GS-04, was upgraded to GS-05, Secretary, currently occupied by M.S. Knox, DAC, GS-05. W.H. Langley, DAC, GS-11, received an upgrade to GS-12.

12. Two capable research individuals who will add significantly to the research activities of the Division of Biorheology were recruited. A health services research psychologist and a neurophysiologist, both of whom will be commissioned as captains in the Medical Service Corps, will be assigned to LAIR at the beginning of the CY 81.

13. The acute requirements for decontaminants and skin decontamination systems that can be used by medical personnel treating chemical warfare contaminated patients has led to an expanding role for the Division of Cutaneous Hazards in Research Area V, Medical Defense Against Chemical Agents. As a result of the USAMRDC Manpower Survey in January and submission of an interim Schedule X in September, requirements were recognized for an addition of 14 military and civilian positions.

14. The Division of Cutaneous Hazards has benefited by the 1979 reduction-in-force at LAIR. Highly qualified personnel have been assigned to the division to fill many of the new positions required for the chemical defense effort. G.J. Klain, Ph.D., DAC, GS-15, Supervisory Research Chemist, who was received from the Division of Nutrition Technology, has assumed direction of the overall effort. P. Schmid, Ph.D., DAC, GS-13, Research Chemist, was returned to the division, and J.R. Jaeger, DAC, GS-11, and C.M. Lewis, DAC, GS-09, were reinstated in their original grades as research chemists. With W.G. Reifenrath, Ph.D., DAC, GS-13, Pharmaceutical Chemist, and the recent arrivals of LTC K.E. Black, MC, Dermatologist, and CPT C.T. White, MS, Organic Chemist, we have a fine nucleus for research in this area. Now our primary requirement is to obtain supporting technicians. However, we still have unfilled the positions for another dermatologist, a biochemist, a physiologist, and a veterinary physiologist.

15. Three authorized positions in Research Area I were lost: an entomologist (CPT R.A. Wirtz, MS) and a vacant enlisted technician position for performing Drosophila mutagenicity tests, and the zoologist position was deleted when the investigator (R.A. Wilson, Ph.D., DAC, GS-12) resigned. However, the research staffing level required for the repellent development program was maintained. 1LT M.D. Buescher, MS, Entomologist, arrived to replace CPT R.L. Hooper, MS, who had departed in 1979.

16. An agreement under Title IV of the Intergovernmental Personnel Act of 1970 was negotiated with the University of Utah College of Medicine for temporary assignment of G.G. Krueger, M.D., Research Dermatologist,

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to the Division of Cutaneous Hazards for 22 weeks during FY 81. Dr. Krueger's expertise will permit us to start research with the nude mouse-grafted human skin model while we provide him expertise in techniques for studying dermal penetration.

17. Key personnel arriving or assuming key positions in the Division of Surgery during the reporting period were: COL R.H. Herman, MC, Chief, Division of Surgery, COL M.G. MacDonald, MC, Internist, A.M. Abou-Zamzam, Ph.D., DAC, GS-13, Research Chemist, and J.D. O'Benar, Ph.D., DAC, GS-11, Research Physiologist.

18. Key personnel departing from the Division of Surgery during the reporting period were: COL R.H. Herman, MC, (deceased), LTC H.E. Cabaud, MC, Orthopedic Surgeon, MAJ R.E. Morris, MC, Internist, CPT M.D. Green, MS, Research Chemist, CPT D.G. Griffin, VC, Research Veterinarian, S.T. Omaye, Ph.D., DAC, GS-12, Research Physiologist, and M.M. Bashor, Ph.D., DAC, GS-12, Research Chemist.

19. Remaining shortages for the Division of Surgery were: one general surgeon (MAJ, MC), one biochemist (MAJ, MS), one GS-09 research physiologist, one GS-09 biological laboratory technician, one O1H2O, and four 92B1R technicians.

20. The Operating Room Services Group, originally under the Division of Surgery, was transferred to the Division of Research Support.

21. Key personnel arriving or assuming key positions in the Division of Blood Research were: LTC R. Bolin, MC, Chief, Division of Blood Research, CPT D. Stewart, MS, Immunologist, CPT G. Boswell, MS, Pharmacologist.

22. LTC C. Peck, Chief, Division of Blood Research departed LAIR in January 1980 to assume new duties in the Division of Clinical Pharmacology, Uniformed Services University of the Health Sciences.

23. To fill a vacant MC position, a new research hematologist, Claes Nilsson, M.D., has been recruited from the civilian community to report for active duty in September 1981.

24. A net gain of two investigators coupled with the gain of two investigators from the previous year has resulted in a 100% growth factor in the Division of Blood Research in the two years. Productivity of the Division of Blood Research is progressively increasing and straining administrative support. A new clerk-typist position was created; it was filled for eight months and helped to meet the added work load.

25. LTC J.T. Fruin, VC, assumed the duties of Chief of the newly established Toxicology Group. Other key members of the Toxicology Group at the end of the reporting period included CPT M.A. Hanes, VC, CPT N. Powers, MS, CPT R.A. Wirtz, MS, SSG F.R. Pulliam, E.L. McGown, Ph.D., DAC, GS-13, and C.A. Allen, DAC, GS-05. Three enlisted personnel were assigned when

the group was established and four additional enlisted personnel were recruited. Three newly authorized civilian positions had not been filled at the end of the reporting period.

26. The following key personnel departed the Pathology Services Group during the report period: CPT J.C. Turnier, MS, and CPT J.R. Matlack, MS. The following key personnel were assigned to the Pathology Services Group during the report period: CPT A.T. Burrs, VC, CPT G.T. Makovec, VC, and B.D. Schwartz, Ph.D., GS-12, Research Biologist (Electron Microscopist). At year's end all authorized positions of the TDA for the Pathology Services Group were filled.

27. The following key personnel departed the Animal Resources Group during the report period: CPT J. Sudduth, VC, SFC I. Pickering, A. Allen, DAC, WG-05, and V.S. Morton, DAC, GS-04. The following key personnel were assigned to the Animal Resources Group during the report period: CPT J.A. Worsing, VC, SSG T. Amen, and M.S. Paule, DAC, GS-04, Secretary.

28. The key person departing from Operating Room Services Group during the reporting period was CPT D.G. Griffin, VC (Comparative Medicine Officer).

29. During the report period the Division of Logistics had a 70% turnover of military personnel positions within the Division which resulted in an intensive short-term training program in order to continue to provide quality supply service to the research mission at LAIR. Two temporary positions, a Purchasing Clerk GS-05, and a Housekeeping Inspector WG-05 became permanent.

#### SECTION IV - TRAINING

1. With a cooperative effort between LAIR and the University of San Francisco (USF), a Graduate/Undergraduate Biological Science Affiliation Program was initiated in September 1980. This program allowed students at USF to obtain laboratory research experience by using the LAIR research facilities as part of their curriculum, while benefiting LAIR through the utilization of the results of the supervised student research efforts. During the reporting period, twelve USF students participated in the program.

2. LAIR military personnel participated in a joint field training exercise with Letterman Army Medical Center during the periods 24 Mar-4 Apr 80 and 27 Sep-10 Oct 80. The exercise, Combat Environmental Transition Training, provided LAIR personnel with refresher instruction on the basic military subjects such as map reading, land navigation, weapons qualification, and other material useful in the transition from a peacetime to a combat environment. Several LAIR NCOs and officers served as cadre members and instructors during both training cycles.

3. Significant improvements were made in providing LAIR enlisted personnel with a Skills Qualification Testing Computerized Program to facilitate preparation for the SQT in all MOSs. The project was originated by SSG D.A. Geroux, Division of Biorheology, and programming assistance was

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provided by SP6 D. L. Stutzman, Information Sciences Group. The utilization of this training aid by LAIR personnel during the reporting period resulted in a 25-30% improvement in SQT scores.

4. LTC H.F. Hacker, MS, attended the course entitled "Personnel Management for Executives," conducted by the West Coast Regional Training Center, Seattle, WA, from 4-15 Feb 80.
5. SFC A. Keeley, SFC E. Rodriguez, and SFC A. Robles successfully completed the First Sergeant's Course, 7th Infantry Division, Ft. Ord, CA, 28 Oct-5 Nov 80.
6. MAJ J.L. Szurek, MS, conducted several inhouse training sessions for laboratory personnel involved with Good Laboratory Practices (GLP) Regulations.
7. D.A. Harris, Ph.D., DAC, GS-12, conducted a course in BASIC programming to LAIR personnel 4-25 Feb 80; and conducted four courses in cardiopulmonary resuscitation (CPR) for LAIR personnel 3-6 Mar 80.
8. T.C. Steward, DAC, GS-11, conducted a class on the operation of the CDC 200 UT remote job entry terminal for personnel of the Resources Management Group, 24 Mar-4 Apr 80.
9. W.L. Langley, DAC, GS-11, and J.T. Hixson, DAC, GS-09, conducted an inhouse seminar on computer graphics on 26 Jun 80.
10. W.L. Langley, DAC, GS-11, attended the course "Role of the Supervisor," given at CPC, PSF, CA, 12 May 80; and completed three courses in computer sciences at San Francisco State University, San Francisco, spring and fall 1980.
11. W.A. Dailey, DAC, GS-11, attended a course entitled Advanced Operating System Internal Structures," Los Angeles, CA, 11-16 May 80; and a course entitled "Operating Systems" Univ. of California, Santa Cruz, CA, 23-29 Jul 80.
12. M.A. Nasr, DAC, GS-09, completed a course on PASCAL programming at San Francisco State University, San Francisco, spring 1980.
13. J.T. Hixson, DAC, GS-09, attended a short course on the FORTH programming held at Humboldt State University, Arcata, CA, 21-25 Jul 80; and completed a course in computer graphics at UC Extension, Berkeley, CA, spring and fall 1980.
14. D.A. Harris, Ph.D., DAC, GS-12, attended a course entitled "Med-80 Computer Applications" in Madison, WI, 20-26 Jul 80.
15. B.E. Stuck, DAC, GS-12, completed a correspondence course, "Microcomputers," National Technical School, Los Angeles, CA, Jan 80.

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16. D.J. Lund, DAC, GS-12, completed a course, "Fundamentals of Laser Speckle," at the Society of Photo-Optical Instrumentation Engineers Conference, San Diego, CA, 28 Jul 80.
17. SP5 S.R. Velez completed the Primary Leadership Course, Ft. Ord, CA, 9-31 Oct 80.
18. D.I. Randolph, Ph.D., DAC, GS-13, completed an electrophysiology course at the Univ. of California Medical Center, San Francisco, 23 Aug 80; and a course entitled "Sensory Evoked Spinal Potentials" at the Univ. of California, Davis, CA, 7 Nov 80.
19. C.W. Van Sice, DAC, GS-11, completed a course entitled "Introduction to Microcomputers," Sunnyvale, CA, 21-24 Oct 80.
20. SP5 P.J. Knowles completed the Operating Room Technicians Course, U.S. Navy Regional Medical Center, Oakland, CA, 7 Jan-15 Mar 80; and attended 20 hours of classes through the Joint Commission of Allied Health Personnel, Chicago, IL, 1-7 Nov 80.
21. SP6 G.W. DeVillez completed a Medical Laboratory Specialist correspondence course at LAIR, Oct 80; and had consultations at LAIR with T. Kuwabara, Ph.D., National Eye Institute, National Institute of Health, on topics concerning optical photo effects, Oct 80.
22. SP5 M. Freeman attended a Management Information Systems class, Treasure Island, CA, Jan-Feb 80; and completed a Masters in Business Administration, Treasure Island, CA, Sep 80.
23. K.R. Bloom, B.S., DAC, GS-11, completed a course entitled "Minicomputers: Configurations and Applications," San Francisco, Sep 80.
24. SP5 P. Nakamura started a correspondence master course, "Industrial and Electronic Techology," National Technical School, Los Angeles, CA, Feb 80; completed "Geometrical and Physical Optics" course at San Francisco State University, San Francisco, May 80; and completed a four-week computer course in BASIC at LAIR, Mar 80.
25. D.A. Stamper, DAC, GS-11, completed INTEL course, "Introduction to Microcomputers," Sunnyvale, CA, 21-24 Oct 80.
26. H. Zwick, Ph.D., DAC, GS-14, completed a course, "Introduction to Speckle Statistics," given by the Society of Photo-Optical Instrumentation Engineers, San Diego, CA, 28 Jul 80.
27. T. Garcia, DAC, GS-07, completed a course, "BASIC Computer Programming," City College of San Francisco, spring 80; and attended the following courses: "Analyzing Data: Nonparametric Statistical Approach," Western

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Regional Training Center, San Francisco, 23-27 Jun 80; "Intermediate Skills in Statistics," Western Regional Training Center, San Francisco, 21-25 Jul 80, and "Computer Assisted Statistical Analysis," Western Regional Training Center, San Francisco, 29 Sep-1 Oct 80.

28. G.E. Esgandarian, DAC, GS-07, completed "Basic Skills in Statistics," Western Regional Training Center, San Francisco, 11-15 Aug 80.

29. CPT R.A. Wirtz, MS, 1LT M.D. Buescher, MS, and L.C. Rutledge, DAC, GS-13, attended the Department of Defense Research and Operational Pest Management Workshop at, Ft. Sam Houston, TX, 4-8 Feb 80.

30. L.C. Rutledge, DAC, GS-13, and SP5 J. Inase attended the Medical Entomology and Pest Control Technology course at the Navy Disease Vector Ecology and Control Center, Alameda Naval Air Station, CA, 3-28 Mar 80.

31. SP6 W. Bell attended the AMEDD advanced NCO course, Ft Sam Houston, TX, 3 Mar-29 May 80.

32. MAJ G.H.G. Eisenberg, MS, and L.C. Rutledge, DAC, GS-13, attended the Management by Objectives Workshop at Western Regional Training Center, San Francisco, 15-17 Apr 80.

33. 1LT M.D. Buescher, MS, visited the Department of Hazardous Microorganisms, at WRAIR, Washington, DC, to receive necessary training for propagation of Trombiculid mites, 21 Apr-2 May 80.

34. CPT C.T. White, MS, and CPT W.W. Jederberg, MS, attended a seminar on Hazardous Waste Disposal, Jack Tar Hotel, San Francisco, 6-7 Oct 80.

35. COL R.F. Bellamy, MC, attended the LAMC Field Training Exercise at Camp Parks, 3-6 May 80, and was OIC of the trainees.

36. COL M.G. MacDonald, MC, attended the LAMC Field Training Exercise at Camp Parks, 30 Sep-2 Oct 80, and was OIC of the trainees, and attended the American College of Physicians Postgraduate Course, "Present Concepts in Internal Medicine," at Letterman Army Medical Center, 7-10 Oct 80.

37. CPT M.D. Green, MS, attended a J.T. Baker course entitled "Management and Disposal of Chemical Wastes," San Francisco, 6-7 Mar 80, and attended a Lay Leadership Conference (to gain training in leadership of religious lay practice in the military), Ft. Ord, CA, 17-21 Mar 80.

38. MAJ P. Sohmer, MC, attended Tutorial in Cytology course at Univ. of Chicago, IL, 16-21 Aug 80.

39. LTC R. Bolin, MC, attended the Annual Meeting, American College of Physicians, New Orleans, LA, 20-23 Apr 80 and was inducted as a Fellow of the College.

40. G. Moore, Ph.D., DAC, GS-14, attended the following PSF Office of Personnel Management courses: Role of the Supervisor, 1 Dec 80, Managing Stress, 30 Sep 80, Performance Appraisal, 8 Dec 80; and the following San Francisco Regional Training Center courses: Nonparametric Analysis, 23-25 Jun 80, Correlation and Regression Analysis, 15-17 Dec 80.

41. F. DeVenuto, Ph.D., DAC, GS-14, attended the course entitled "Personnel Management for Executives," conducted by the West Coast Army Regional Training Center, Seattle, WA, 4-16 Feb 80.

42. CPT D. Stewart, MS, attended the symposium, "Treatment of Radiation Casualty - An Overview of the Current Status of Bone Marrow Transplantation," Armed Forces Radiobiology Research Institute, Bethesda, MD, 15-18 Sep 80.

43. M. Moore, DAC, GS-11, attended a PSF Office of Personnel Management course entitled "Anger, Conflict and Stress," 17 Sep 80.

44. SP5 J. Hawkins attended a course "Nurses Role in Plasma Pheresis," Children's Hospital, San Francisco, 16 Dec 80.

45. LTC P. B. Jennings, VC, attended the Current Concepts of Combat Casualty Resuscitation Symposium, 15-19 Sep 80, in Bethesda, Maryland.

46. LTC J.T. Fruin, VC, LTC P. Mellick, VC, MAJ J.L. Szurek, MS, CPT M.A. Hanes, VC, and E.L. McGowen, Ph.D., DAC, GS-13, conducted a series of hands-on and didactic training sessions for investigators and technicians on the documentation requirements, technical procedures, and complete conduct of nonclinical studies conducted in compliance with Federal Good Laboratory Practice Regulations. More than 70 LAIR staff members attended at least a portion of the training sessions.

47. Since toxicologic studies generate an enormous work load in Pathology, the AMEDD Veterinary Pathology Preceptorship Program was resumed. Three officers: CPT M.J. Langford, VC, CPT G.T. Makovec, VC, and CPT A.T. Burrs, VC, are currently serving residencies in this program.

a. CPT M.J. Langford, VC, attended a short course on the Pathology of Laboratory Animals at the Armed Forces Institute of Pathology, Washington, DC, 11-15 Aug 80.

b. Members of the Pathology Services Group provided training in tissue preparation techniques and electron microscope operation to investigators and technicians assigned to the Divisions of Research Support, Biopathology, and Surgery.

48. CPT J.A. Worsing, VC, attended the Pathology of Laboratory Animals AMEDD short course at the Armed Forces Institute of Pathology, Washington, DC, 10-15 Aug 80. Weekly training seminars in animal restraint, anesthesia, and radiology were conducted for veterinary technicians.

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49. The Radioisotope Services Group assisted in a training portion of the LAMC course, "Safe Use and Handling of Radioisotopes." The Radioisotope Support Group conducted Radiation Safety Training classes for LAIR laboratory technicians.

50. MAJ R.S. Dixon, VC, attended the American College of Veterinary Surgeons Meeting, 4-6 Feb 80, Knoxville, TN. SSG M. De La Cerdia and SP5 D. Weber attended the Instrumentation Laboratories Blood Gas Seminars, 11-13 Aug 80, Menlo Park, CA. SFC M. Jones was a member of Cadre for Field Training Exercise at Camp Parks, 28 Apr-10 May 80 and 24 Sep-8 Oct 80.

51. SP5 J. Alletto attended US Army Drug and Alcohol Team Training Course, Academy of Health Sciences, Ft. Sam Houston, TX, Sep 80. He also attended Clinical Biochemistry Laboratory Course at San Francisco State University, fall, 80; Organic Chemistry at Cal-State University, Hayward, spring and summer 80; Marketing for Health Care Institutions, Jul 80; Personnel Management, Aug 80; Accounting for Health Care Institutions, Oct 80; Financial Management for Health Care Institutions, Nov 80; Administrative Controls, Dec 80, at Treasure Island Educational Center through the Center for Special and Advanced programs, Univ. of Northern Colorado.

52. J.A. Tillotson, DAC, GS-12, attended the American Medical Writers Association Western Regional Conference Workshop, 12-15 May 80, and the Hewlett Packard Training Course for High Pressure Liquid Chromatography, 14-16 Oct 80.

53. The following training courses were attended by personnel of Division of Logistics:

a. CPT R.H. Neuteboom, MS, attended the Army Health Care Logistics Management Professional Post Graduate short course at Fitzsimmons Army Medical Center, Denver, CO, 21-25 Apr 80.

b. SFC D.H. Fuss, SSG D.J. Biron, K. Yamada, DAC, GS-09, P.R. Enold, DAC, GS-09, and T.J. Thompson, DAC, WL-II, attended the Gilford Equipment Repair Training Course, 21-24 Jul 80.

c. L.D. Bohler, DAC, GS-12, attended Managing Housekeeping Services Seminar, 20-21 Mar 80.

d. P.R. Enold, DAC, GS-09, and K. Yamada, DAC, GS-09, attended IRD Mechanalysis Seminar, 18-19 Jan 80.

#### SECTION V - MATERIEL

1. The transfer of a large amount of equipment to the USDA with the Nutrition program resulted in the loss of several key one of-a-kind instruments. Major items replaced have been the GEMSAEC autoanalyzer, flame photometer, and high performance liquid chromatography and dector system. Key items of equipment shortages that remain are microprocessor controlled spectrophotometer, spectrofluorometer, and gas liquid chromatograph.

2. The establishment of a much greater toxicology research and testing program necessitated the dedication of certain restricted areas for the handling of toxic compounds. These areas must be equipped with special purpose hoods and filtering devices to protect personnel. This equipment must be especially constructed. The time lag from purchase to receipt and installation is expected to be extremely long.

3. In order to collect, tabulate, analyze, and store the voluminous data generated by toxicology studies, the TOXYS data acquisition system, manufactured and marketed by Beckman Instrument Company, was obtained during 1979. During the current reporting period, the following software systems were obtained and put into use: Experimental Data Systems, Animal Removal System, Protocol Administration System, Animal Receipt System, Animal Allocation System, and the Clinical Observation System. The implementation of these data acquisition and analysis systems promises to increase efficiency in conducting toxicology studies.

4. The accountable property at the LAIR decreased to 14,057 line items with a decreased value of \$9,925,306. This compares to 15,047 line items valued at \$10,589,055 reported for the previous year. The reduction is due mainly to property transferred to the USDA due to mission change at LAIR.

5. A total of 603 line items with a value of \$262,986 of excess and/or salvage equipment was turned in to the Property Disposal Office, Alameda, CA or otherwise redistributed during the report period. This should decrease during the next fiscal year, because a majority of equipment now on hand is being used by the research divisions for their mission requirements.

6. The average number of standard requisitions processed each month during the past year was 143 line items. Nonstandard purchase requests averaged 288 line items processed each month during the previous period. The LAIR established 24 Blanket Purchase Agreements (BPAs) during the report period. The requisitions associated with these BPAs averaged 250 line items processed each month. Thus, a significant amount of all items requisitioned for the LAIR during this period was for nonstandard items.

7. Expenditures for capital or other major items amounted to approximately \$525,000 for CY 80. All required equipment for mission accomplishment were purchased during the year. It is expected that there will be an increase in procurement of equipment in CY 81 due to new research missions at LAIR and availability of funds for CY 81.

8. A 100 percent physical inventory of the accountable property was conducted by the property management personnel during the reporting period. This was accomplished by inventorizing two to four hand receipts each month. No serious damage to property occurred during the year.

9. Army Medical Department Property Accounting System (AMEDDPAS). The implementation of change package 5, which was scheduled for Nov 80, has been delayed until May 81. Due to personnel rotation, two new individuals have been trained in this area.

## SECTION VI - CONSTRUCTION

1. On 29 Jan 80 D.L. Bohler, DAC, GS-12, CPT R.W. Serenbetz, MS, and personnel from LAMC had a meeting with the Directorate of Facility Engineers to finalize plans for providing power to the LAMC, Automated Management Office, located in AS1101.
2. The 200UT site was moved from AS1101 to AS3312 to permit ready access by primary users located on the third floor of LAIR.
3. As a result of Headquarter's decisions and agreements, personnel and facilities located on the third floor of the LAIR were consolidated into laboratories on the second floor formerly occupied by the Division of Nutrition. The USDA took possession of 4,080 square feet of space on the third floor of LAIR. Major changes in the building, such as removal of walls and utilities, were necessary in LR2166, 2167, 2168, and 2154. In addition, 150 square foot sound attenuating booth was relocated. This booth is currently in LR2155. New office facilities were made available to Division of Biomechanics personnel in the AS Building, which currently houses three offices and a complex for dark adaptation and neurophysiological measurements of vision.
4. In this period the necropsy room facilities were moved to the old surgical suite on the third floor of Phase I. Minor construction was required in moving the necropsy tables.
5. The research laboratory portion of the Radioisotope Support Group was altered to include air and vacuum.
6. The following projects were completed during 1980:
  - a. LAMC-MISO move. The LAIR building was modified, with electrical and structural construction, to allow the LAMC MISO to move into the LAIR building.
  - b. LAMC-Ft. Baker move. The LAIR laboratory section was modified to accommodate the movement of the Ft. Baker laboratory into the LAIR building. Considerable modifications were made to the laboratory section, including movement of casework and installation of utilities.
  - c. BLASER move. The BLASER project was moved during early 1980 to make room for the USDA to move into the LAIR. This move involved considerable laboratory modifications, including complete installation of new electrical services to support the project.
  - d. LAIR incinerator. The LAIR incinerator operation was improved, during 1980, including the installation of an automatic temperature control unit. This improvement, along with the existing improved operational techniques and the soon-to-be installed air blower (for improved combustion efficiency), keeps the unit within the Bay Area pollution standards.

2.. The following projects have been started in 1980 and have not yet been completed:

- a. Ballistics injury laboratory. The structural modifications necessary for the project are being completed. The electrical portion of the job is awaiting funding. Project is approximately 15% complete.
- b. Computer uninterruptible power system (UPS) system. A design effort will be pursued upon availability of funds to provide proper electrical power service for the new LAIR computers programmed to be procured during the FY 81. The UPS system, although expensive, is the best alternative for the new power requirements for the additions to the LAIR computer system. To expand the existing power system will also be expensive. The new system will still have the existing "dirty" power characteristics that give problems to computer systems. Project is approximately 2% complete.
- c. LAIR chemical storage building. This minor exigent project will add chemical storage space for the LAIR facility. Presently the LAIR chemical storage is inadequate. The new facility is scheduled to be completed in Oct 82. Project is approximately 10% complete (design is 100% complete).
- d. LAMC Ft. Baker ether extraction laboratory. This project consists of modification of existing animal facilities in the LAIR animal wing. The modification includes structural, electrical, and mechanical changes to provide an explosion-proof area in which extraction work can be performed. This project is scheduled to be completed in Jan 81. Project is approximately 30% complete.

#### SECTION VII - ASSISTANCE PROVIDED CIVILIAN AND OTHER GOVERNMENTAL AGENCIES

1. Funding support and oversight management for medical research in combat casualty care was provided to approximately 50 investigators at university and research centers throughout the United States. Approximately \$2.5 million were available for these activities during FY 80. This extramural program is administered through a system of contracts and grants and is designed to augment and/or complement inhouse medical research capabilities.

2. On 24 Jan 80, all personnel from the Information Sciences Group visited the Army Corps of Engineers, San Francisco, to observe a demonstration of its graphics capability. One result of that visit was the receipt of their Corps' Extended Easy Graphing package which we are testing and developing for inclusion into our graphics capability.

3. A meeting was conducted on 29 Jan 80 with personnel from LAMC and LAIR. Problems were discussed which would be encountered in conjunction with LAMC's Automated Management Office (AMO) sharing the building resources existing in AS1101 (the computer room area), e.g., electrical

power, modification of the automatic fire extinguishing system, physical security, and liability for losses of equipment and/or data residing at LAIR.

4. CPT R.W. Serenbetz, MS, and 2LT M.C. Sawyers, MS, provided design and installation assistance to LAMC AMO for communications lines which currently support its interactive terminals.

5. The Staff of the Information Sciences Group provided consultative and data processing machine time support to MAJ T.J. Marciniak, MS, TRIMIS-Army, WRAMC, who is conducting the conversion of the CLINFO data base management system to the LAIR Data General ECLIPSE C/330 mini-computer.

6. CPT R.W. Serenbetz, MS, W.H. Langley, DAC, GS-11, and W.H. Dailey, DAC, GS-11, designed and developed communications hardware, software, and documentation, respectively, to support on the LAIR Data General ECLIPSE C/330 minicomputer the electronic mail system. This system is available to every laboratory within USAMRDC.

7. V.L. Gildengorin, Ph.D., DAC, GS-11, served as a statistical consultant throughout the year to LAMC and other outside agencies, and as an evaluator of several research proposals to the Mathematics Division of the US Army Research Office, Research Triangle Park, NC.

8. D.A. Harris, Ph.D., DAC, GS-12, and M.A. Nasr, DAC, GS-09, met with Raltech personnel in St. Louis, MO, 6 May 80 to coordinate submission of computer tapes containing irradiated food data from Raltech to LAIR.

9. Investigators from the Division of Biophysics have interacted on several occasions with members of the Z136 Committee of the American National Standards Institute (ANSI), 1430 Broadway, New York, NY, which is charged with the responsibility of revising and updating the current consensus standard concerning the safe use of lasers. At the Society of Photo-Optical Instrumentation Engineers (SPIE) Symposium in Washington, DC, 7 Apr 80, devoted to non-ionizing radiation effects, recent research was presented and discussed with other ANSI committee members as well as participants from the Bureau of Radiological Health responsible for the laser products guide. Discussions were held with Woody Parr, Ph.D., (Chief, Physical Agents Branch, National Institutes of Occupational Safety and Health (NIOSH); ANSI Z136 Sub-Committee Chairman for Cutaneous Hazards) concerning current status of the Occupational Safety and Health Agency (OSHA) laser safety standards and current concerns with laser protection standards. Myron Wolbarsht, Ph.D., (Chairman, ANSI Eye Committee) and Dave Sliney, DAC, GS-15, (US Army Environmental Hygiene Agency (AEHA) visited LAIR and discussed recent laser bioeffects and their impact on revision of permissible exposure limits. Areas of concern in laser safety based upon recent LAIR data are summarized as follows: treatment of repetitive pulses in visible and infrared; wavelength dependence in the visible, near infrared, and infrared; and problems with chronic repeated exposure at low doses.

10. The Federal Aviation Administration continues to consult with personnel in the Division of Biorheology and to request interpretation of bio-effects data pertinent to its contractual effort designed to develop and fabricate an "eye safe" cloud height ceilo motor for use in and around commercial airports.

11. Division of Biorheology personnel gave instructional lectures on laser bioeffects to the National Aeronautics and Space Administration personnel at Ames Research Laboratory, Moffett Field, CA, on 6 Nov 80.

12. Technical assistance and interpretation of laser bioeffects and laser safety standards were provided to Coherent, Inc., Mountain View, CA.

13. Three students from the Univ. of San Francisco were accepted for participation in research projects within the Division of Cutaneous Hazards in support of a cooperative program that gives the students academic credit and an opportunity to participate in an ongoing research program.

14. COL R.H. Herman, MC, served as The Surgeon General's Consultant in Metabolic Diseases and The Surgeon General's Consultant in Nutrition. He also held the position of Associate Clinical Professor of Medicine, Department of Medicine, Univ. of California School of Medicine, San Francisco. He attended medical grand rounds at Fitzsimmons Army Medical Center, Denver, CO, as Visiting Professor in Endocrinology and Medicine, 11-14 Jun 80.

15. COL R.F. Bellamy, MC, was a member of the AMEDD Selection Board, Washington, DC, 2-7 Jun 80 and 21-27 Sep 80. He also served as a guest referee for Circulation Research and Circulation.

16. COL M.C. MacDonald, MC, assists at the weekly LAMC Endocrine outpatient clinic.

17. LTC H.E. Cabaud, MC, is a member of the Publications Committee, American Orthopaedic Society for Sports Medicine, and is a staff member at Presbyterian Hospital, Pacific Medical Center, and St. Joseph's Hospital, San Francisco.

18. MAJ L.W. Traverso, MC, serves as Assistant Clinical Professor of Surgery, UCLA School of Medicine, and Assistant Clinical Professor of Surgery, Uniformed Services University of the Health Sciences. He was a guest speaker at the Gary P. Wratten Surgical Symposium, Walter Reed Army Medical Center, Washington, DC, 7-9 May 80. MAJ Traverso also attended grand rounds at the Veterans Administration Hospital, Martinez, CA; Kaiser Permanente Medical Center, San Francisco; San Bernardino County Medical Center, San Bernardino, CA; Kaiser Permanente Medical Center, Oakland, CA; University of California, Davis; and Letterman Army Medical Center, San Francisco.

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19. J.P. Hannon, Ph.D., DAC, GS-15, served as a scientific journal referee for the American Physiological Society, The American Veterinary Medical Society, and the American Association for the Advancement of Science; a scientific advisor to the National Science Foundation Research Grants Offices; Science and Engineering Career Advisor for the U.S. Office of Personnel Management (OPM); a member of the LAMC Clinical Investigation and Human Use Committees; and a consultant to the Nutrition Institute, USDA, on nutritional aspects of high altitude exposure.
20. J.D. O'Benar, Ph.D., DAC, GS-11, served as a manuscript reviewer for the Science magazine editorial offices, American Association for the Advancement of Science.
21. MAJ P. Sohmer, MC, has been involved with civilian hospitals, nationwide, and has participated in the following programs: American Association of Blood Banks Symposium, Washington, DC, 7-8 Nov 80; Grand Rounds, San Francisco General Hospital, 19 Jan 80 and 7 Apr 80; City of Hope Hospital, Duarte, CA, 27 Sep 80; Irwin Memorial Hospital, San Francisco, 15 Oct 80; Hematology/Oncology Conference, LAMC, 15 Apr 80.
22. MAJ P. Scannon, MC, instructed and supervised a course on cardio-pulmonary resuscitation, LAMC, 15-19 Dec 80.
23. LTC R. Bolin, MC, participated in Hematology and Oncology Clinic on a weekly basis, LAMC, and provided consultation to the staff for hemostasis disorders and pheresis procedures.
24. LTC P.B. Jennings, Jr., VC, presented a paper at the 15th Annual Meeting of the American College of Veterinary Surgeons in Knoxville, TN, 6 Feb 80, and also at the 8th Annual Veterinary Surgical Forum, Chicago, IL, 29-31 Oct 80. LTC Jennings was Chairman of the Forum in 1980.
25. LTC J. Fruin, VC, served as Consultant to the US Army Surgeon General in Food Hygiene. He provided assistance by making recommendations to the Assistant Surgeon General for Veterinary Services regarding food hygiene problems in the hospital feeding facility at Walter Reed Army Medical Center (WRAMC) Veterinary Activity. He provided recommendations to Army Food Testing Laboratories regarding bacterial contamination of foods. LTC Fruin also prepared items for the Army Veterinary Corps News Memorandum and answered specific questions from Army field activity veterinarians and food service personnel regarding food hygiene.
26. CPT R.A. Wirtz, MS, attended the Armed Forces Pest Management Board meeting in Washington, DC, 8-12 Dec 80.
27. LTC P.W. Mellick, VC, provided assistance to the following activities:
  - a. Participated as a guest lecturer at the short course in Comparative Pathology, Armed Forces Institute of Pathology, 6-8 May 80. He

presented a lecture entitle, "Comparative Pulmonary Pathology."

b. Participated as a guest lecturer at the Symposium on Military Veterinary Medicine, Walter Reed Army Institute of Research, 19-23 May 80. He presented a lecture entitled, "Pathophysiology of Pulmonary Disease."

c. Served on a standing committee to provide liaison between the American College of Veterinary Pathologists and the Registry of Veterinary Pathology, Armed Forces Institute of Pathology.

d. Served on the Education Committee of the American College of Veterinary Pathologists for organizing the scientific program for the 1981 Annual Meeting.

28. The staff of the Pathology Services Group provided consultative support to San Francisco Zoological Gardens, Steinhart Aquarium at the California Academy of Sciences, and to several civilian veterinarians in the San Francisco Bay Area on selected cases.

29. LTC J.A. Goldsboro, VC, provided assistance to the following activities:

a. Presented a two-day lecture on Primate Diseases and Use of Primates in Biomedical Research to third year Veterinary students at the Tuskegee Institute School of Veterinary Medicine, 4-5 Feb 80.

b. Participated as a guest lecturer at the 15th Annual Veterinary Symposium, Tuskegee Institute, AL and presented a lecture entitled: "Establishment of Primate Breeding Colonies," 29 Mar-1 Apr 80.

c. Was named an Adjunct Professor, Laboratory Animal Medicine, Tuskegee Institute School of Veterinary Medicine.

d. Served as a consultant on Laboratory Animal Medicine to the Naval Biomedical Research Laboratory and the Clinical Investigation Service, U.S. Naval Regional Medical Center, Oakland, CA, 1 Jan 80-31 Dec 80.

e. Served on the AMEDD Command and General Staff College Selection Board, 13-15 Aug 80.

30. Operating Services Group provided full staff and facilities to support LAMC Laser Endoscopy Training Course, 9, 10, and 11 Apr 80.

31. The Chief, Activity Support Group has been spending approximately 15% of his time for engineering, building maintenance, and construction inspection for the LAMC and USDA elements in the LAIR Building.

#### SECTION VIII - IMPROVEMENTS AND SIGNIFICANT ACCOMPLISHMENTS

1. Acquisition of automated black and white printing and color film

processors has significantly reduced the lead time for black and white prints and color slide processing. The lead time reduction is currently five times more responsive than prior to the acquisition of the equipment. This allows for greater flexibility for the Medical AV Officer when providing the research staff slides and prints for conferences and presentations.

2. The Quality Assurance Unit has overseen the development of approximately 100 technical and administrative SOPs required for compliance with Food and Drug Administration (FDA) and Environmental Protection Agency (EPA) Good Laboratory Practices (GLP) regulations. Standards for data collection, management, and archiving have been established.

3. Computer programs for the management of toxicology data were procured from Beckman, Inc. to complement equipment acquired previously. This extensive data acquisition, management and reporting system for toxicology data, called TOXSYS, is now in final installation and testing stages while it is being used to collect and report data for current toxicology studies. The contractor continues to work with Information Sciences, Toxicology, and Quality Assurance personnel at LAIR to install, customize, and debug the system.

4. A program was developed by the Administrative Programming Team, Information Sciences Group, to assist in consolidating laboratory notebook data. This program is controlled by personnel within the office of the ADJ/DET CDR, LAIR. It has a report generator which provides a global snapshot of the status of laboratory notebooks issued to LAIR personnel. Program development was managed by SP6 J.L. Moore. The program was written by SP6 J.E. LeSueur. Program analysis and debugging was provided by SP6 D.L. Stutzman.

5. On 24 Jun 80, the NICOLET, Med 80/4 system arrived at LAIR. This system provides on-line diagnostics capability for visually evoked and somatosensory responses. This resource is managed by the Technology Team leader, D.A. Harris, Ph.D., DAC, GS-12, Information Sciences Group, who provides for scheduling, as well as technical, operating, and consulting services as required.

6. A program was developed by SP6 D.L. Stutzman which provides for the generation of a LAIR telephone roster. Key operators are permitted to add, change, and delete records. The program is controlled by the office of the ADJ/DET CDR.

7. A system developed by SP6 D.L. Stutzman provides for loose issue inventory control. Output reports are keypunched and forwarded to the Resources Management Group for inclusion into the financial system, LAIR. This program is controlled by the Division of Logistics.

8. SP6 D.L. Stutzman completely revised and enhanced an SQT Test training program initiated by the former Chief, Information Sciences Group,

MAJ J.L. Szurek, MS, and controlled by SFC D. Geroux of the Division of Biomechanics. This program has generated considerable interest in LAMC and LAIR personnel, and is currently being studied by USAMRDC for possible adoption command-wide.

9. Extensive testing of the protocol administration system; environment identification system; experiment data system and software components; and of the TOXSYS system for data acquisition, data management, and reporting was initiated. Similar diagnostic testing of TOXSYS data collection terminals was also initiated.

10. Hardware components and data acquisition features of the DEC MINC minicomputer were tested before release of the machine to the Division of Research Support, Analytical Chemistry Services Group.

11. Maintenance was performed on the equipment calibration scheduling program, LISTCAL, to revise hand receipt designations.

12. An HP9815S programmable calculator was successfully interfaced to Ann Arbor electronic digital balances to control weight data acquisition for toxicology studies.

13. Software was developed with handshaking and checksum error detection features to control data transfer between an HP9815S programmable calculator and the Data General ECLIPSE C/330 minicomputer.

14. Conversion was initiated to the Data General ECLIPSE C/330 minicomputer of software and supporting data files of the Corps' Extended Easy Graphing software package received from the US Army Corps of Engineers, WES, Vicksburg, MS.

15. A MARKEM Corp. Scanmark bar code printer was successfully interfaced to the Data General ECLIPSE C/330 minicomputer.

16. Main memory in seven TOXSYS data collection terminals was increased from 16K to 32K bytes.

17. A Tektronix 4027 color graphics terminal, Dunn 631 film recorder, and PLOT10 Color Easygraphing software package were received to support enhanced computer graphics capabilities on the Data General ECLIPSE C/330 minicomputer.

18. Targeting of the CLINFO data base management system to a Data General NOVA 1220 minicomputer was abandoned because of insufficient workspace when running BASIC programming.

19. FORTH, PASCAL, and PL/I programming languages were installed on a Z-80 microprocessor based S-100 bus computer used for data acquisition research. MP/M, the networking version of the CP/M operating system, has been received for installation and testing of this computer.

20. The Tektronix, Inc., PLOT10 Easygraphing software package was

installed on the Data General ECLIPSE C/330 minicomputer. Software enhancements were integrated into that package to handle bar code texturing, line hashing, and least squares regression analysis and to control ECLIPSE C/330 to Tektronix 4662 digital plotter data transmission delays.

21. The Division of Biophysics has completed pulse repetition infrared laser exposures at 10 Hz for 1, 2, 3, 5, and 10 pulses and important data base of infrared laser safety.

22. The Division of Biophysics has completed 10 Hz and 1000 Hz pulse repetition data for verification of  $N^{-1}$  relationship in permissible exposure level extrapolation.

23. Use of triamcinolone acetate (retrobulbar) was shown in non-human subjects to be ineffective in reducing vitreal band formation after ocular injury.

24. Broadbanded green strobe flashes 100 ms in duration produced 2-second and 15-second decrements in low light level adaptation.

25. Urokinase injected into the vitreous of rabbits was effective in promoting reabsorption of blood after ocular injury.

26. A project for establishment of a breeding colony of nude mice and capability for successfully grafting human and animal skin to the mice has been initiated. The nude mouse colony will be useful for the hematopoietic stem cell transfer investigations in the Division of Blood Research and the studies of skin function, dermal penetration, and chemical decontamination in the Division of Cutaneous Hazards. The grafting capability is expected to permit studies of functioning human skin under conditions that would not permit participation by human volunteers.

27. Research planning for the chemical defense and basic skin science efforts has been completed and 5 research studies have been started on the effects of organophosphate compounds on energy supply systems, the effects of hormones on levels of choline acetyltransferase and acetylcholinesterase activity in the skin, skin permeability values in model systems and in man, recrudescence of disease resulting from percutaneous exposure to vesicants and assessment of diethylmalonate as a simulant for GD (to be conducted at the USA Biomedical Laboratory).

28. A colony of chigger mites has been established to broaden the available spectrum of arthropod test species in the repellent program.

29. Two silicone polymer formulations of diethyl toluamide (deet) were significantly superior to the standard Army formulation of deet when tested on mice against Aedes aegypti at 3 hours after application.

30. Three commercial repellents were selected as expedient substitutes for deet in the event that the Environmental Protection Agency registration of deet is cancelled on short notice.

31. Establishment of the microbiology support function within the Division of Cutaneous Hazards was completed and the standard operating procedures required for compliance with the Good Laboratory Practices regulations of the Environmental Protection Agency and the Food and Drug Administration have been written and approved by the Quality Assurance Officer, LAIR.

32. Surgical procedures were developed for chronic monitoring of cardiovascular function and blood chemistry in conscious unrestrained domestic pigs.

33. Certain of the hemodynamic and chemical characteristics of hypovolemic shock and recovery therefrom were described in conscious pigs. The pig was an excellent animal model to study the physiologic consequences of hemorrhage, as might be seen in combat casualties.

34. Metmyoglobin reductase, cytochrome c, and mitochondrial oxidative functions are each influenced in a characteristic manner by iron deficiency and exercise.

35. Branched chain amino acid metabolism was shown to be altered in wounded tissues both vivo and in vitro.

36. A new computerized system for measuring regional blood flows with radioactive microspheres has been implemented in collaboration with the Information Sciences Group.

37. A pancreatic shock factor was isolated and hemodynamically characterized.

38. There is no statistical difference between an interfascicular graft and an epineurial technique under tension in overcoming segmental nerve deficits in cynomolgus monkeys. The technical difficulty which was encountered with large defects justifies the use of sural nerve grafts in overcoming large defects.

39. Shifting the oxyhemoglobin dissociation curve to the left (increased affinity) with cyanate salts gives temporary protection to rats from the effects of organophosphate poisons.

40. No significant differences were observed in either the rate of wound healing or incision tensile strength of animals exposed to a 5 mW HeNe laser.

41. A reproducible chronically catheterized rat hemorrhagic shock model was perfected.

42. A reproducible pig model using radioisotopes for study of blood flow during cardiopulmonary resuscitation was developed.
43. Hemodilution with albumin to a hematocrit of 15% results in no loss in function in situ working hearts on right heart bypass. Function could not be achieved at hematocrits of 5% or 10%.
44. LTC R. Bolin, MC, and G. Moore, Ph.D., DAC, GS-14, are project manager and assistant project manager, respectively, for the U.S. Army Medical Research and Development Command's Ad Hoc Committee for Extramural Contracts on Blood Products and Preservation. This committee of nationally recognized experts was established to evaluate the scientific merit of all Army funded contracts and to monitor their progress. In addition, the inhouse protocols are also evaluated by this committee. All inhouse protocols have been approved in principle. Two of the existing six protocols were recommended to be revised and updated to reflect current missions (blood substitutes and optimal blood products). These two protocols will be reevaluated at the biannual meeting of the committee in May 81. This committee will result in a more cost-effective contract program aimed to complement the Army's inhouse efforts.
45. Site visits to individual contractors by Division of Blood Research key personnel were begun. Persons making these visits evaluate progress. The visits allow interactions with investigators and give the committee insight into capabilities of the contractors. The following site visits were made this year:
- a. LTC R. Bolin, MC, made a site visit to R. Ben Davison, M.D., at University of Maryland, Baltimore, MD, to Tom Davis, Ph.D., at Exxon Corporation, Linden, NJ, and to Zoila Reyes, Ph.D., at Stanford Research Institute, Palo Alto, CA.
- b. MAJ P. Scannon, MC, made a site visit to Rollie Meyers, Ph.D., at University of California, Berkeley, CA.
46. Studies were completed that demonstrated high energy irradiation of beef and chicken meats does not create antipyridoxin and anti-riboflavin factors.
47. The ability to conduct the Ames Salmonella/mammalian microsome mutagenicity test, the *Drosophila* sex-linked recessive lethal (SLRL) test, and the acute toxicology test in rats and mice in accordance with Federal Good Laboratory Practice (GLP) regulations has been established.
48. The Ames test demonstrated that high energy irradiation of foods does not affect the mutagenic potential of the food item.
49. The benzoquinones released into farinaceous food products by infesting insects were demonstrated to be toxic to rats when administered orally but were shown to be nonmutagenic by the Ames test and the *Drosophila* SLRL tests.

50. Test compounds 4-nitrophenyl diphenylphosphonate, 4-nitrophenyl methyl (phenyl) phosphonate, 4-nitrophenyl dimethylphosphonate, 4-chlorophenyl diphenylphosphonate, 4-chlorophenyl methyl (phenyl) phosphonate and N-(n-acetyl) gultarimide were nonmutagenic by the Ames Test.

51. Test compound n-hexyl-2 oxazolidine was a weak mutagen by the Ames test.

52. The oral LD<sub>50</sub> of 2,4-dinitrotoluene was determined to be 1427 in male rats and 1020 in female rats.

53. Moving LAIR necropsy facilities to the old surgical suite and modification of these rooms for necropsy procedures greatly improved the capability of Pathology Services Group to accomplish the required workload. This move was necessitated by the increase in the number of animals on which necropsy must be performed during the course of toxicology studies. The new facilities provide sufficient space for a number of people to work while collecting post mortem data.

54. The principal research activity supported by the Pathology Services Group was a study entitled, "Military Toxicology I, the Toxicology of 2,4 Dinitrotoluene (2,4-DNT)." During this reporting period, LD<sub>50</sub> determinations in male and female rats and mice for 2,4-DNT were done. Support of these studies necessitated the development of standard operating procedures for pathology support and the detailed gross necropsy examinations of over 500 laboratory animals.

55. A new work unit entitled "In Vitro Cell Toxicology" was established. Two pilot protocols to investigate the possibilities of using in vitro systems for testing the toxicity of chemicals of military importance were approved. One of these studies will involve the use of tracheal organ cultures as test systems; the other involves the use of pulmonary alveolar macrophages. At year's end a master protocol and several study protocols for the detailed investigation of these systems was in preparation.

56. Personnel assigned to the Pathology Services Group participated as collaborators and co-investigators on 11 projects originating in other LAIR divisions. The Operating Room Services Group reported that it:

- a. Coordinated and supported Army Science Conference Exhibit within LAIR, 23 Sep 80.
- b. Developed chronic catheterization surgical procedures for arterial and venous systems of swine.
- c. Developed a neurosurgical model in swine for the study of high velocity wounds.
- d. Developed surgical model in rabbits for laser studies of wound healing.

e. Improved anesthesia and surgical techniques in rats for the pharmacological stabilization of the combat casualty.

58. A computerized stock control system for Loose Issue supplies was developed. This system provided the Chief of Logistics access to readily available information on issues and receipts to the different divisions within LAIR, insured that accountability was maintained, and insured that no abuses were made by the customers using the loose issue supply system. This system resulted in a 5% reduction in the supply budget in CY 80 which was a \$7,500 savings.

59. A Mission Account system was developed for LAIR, which allowed LAIR to order all nonstandard medical supply material directly from the Procurement Division at LAMC without going through the LAMC Medical Supply Division. This system saved approximately \$35,000 in intraservice support agreements with LAMC and decreased the order/ship time by approximately five days.

60. The Division of Logistics obtained a new warehouse building (1169) which allowed the Supply Group to store excess equipment in a more manageable and secure environment. This new warehouse eliminated a need for a warehouse at Ft. Baker.

61. Energy Conservation program is continuing, with the following actions taken during the last year: reduction of the run time of non-essential equipment; reduction of heating water temperatures; reduction of lighting in common areas during duty hours, and elimination of most of the lighting load after duty hours; sealing of some sections of the building to minimize cold air infiltration; setting nonoccupied animal rooms at minimum energy use temperatures and humidities; and the start of a program to use outside air, as much as practical, for heating/cooling of administrative area.

62. Division of Logistics reorganized the physical locations within LAIR to utilize more efficiently the space allocated by the Command. This reorganization allowed for the reduction of approximately 15% space requirement without impairing essential functions.

#### SECTION IX - INSPECTIONS, SURVEYS, AND AUDITS

1. The Army Science Board met at LAIR on 23 Sep 80. Presentations were given by BG G. Rapmund, MC, on the USAMRDC Research Program; W.G. Reifenrath, DAC, GS-13, on the Efficiency of Shower Contamination of Chemical Agent Stimulate; LTC R.B. Bolin, MC, on the Licensure of CPD-Adenine for Extended Storage of Whole Blood; and COL E.S. Beatrice, MC, on Army Laser Technology and Biomedical Research. After the presentations, the members toured the LAIR facility with minibriefings given by each Research Division.

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2. Congressman John L. Burton visited LAIR on 20 Oct 80 after allegations were made that LAIR was conducting biological warfare testing using infectious material. While the allegation was unfounded, he requested Representative Jack Brooks of Texas, Chairman of the Government Operations Committee to call upon the Government Accounting Office (GAO) to investigate this possible health hazard to the San Francisco area. Two members from GAO Investigations Team visited LAIR on 9 Dec 80. The results of their investigation are not expected to be released until mid-1981.

3. The Civilian Personnel Office, Presidio of San Francisco, conducted the FY 80 Annual Position and Pay Management Survey for LAIR from Apr-Aug 80. The audits conducted were a part of a two-year cycle requirement that 50% of LAIR's positions be surveyed each year. In addition, the survey included all of LAIR's research positions, plus those positions that were reported as being inaccurate.

4. The LAIR Quality Assurance Unit conducted numerous inhouse inspections of ongoing toxicology studies as required for compliance with Good Laboratory Practices (GLP) regulations. The degree of compliance of LAIR toxicology studies with these regulations has shown substantial and systematic improvement in the past year.

5. J.R. Neville, Ph.D., DAC, GS-14, made scientific site visits to the following contractors during CY 80:

Dr. Carol Miller, UCSF, January 1980.  
Dr. William Moores, Veterans Administration Hospital, San Diego, CA, February 1980.  
Dr. Ernest Beutler, Scripps Institute, February 1980  
Dr. Abraham Braude, University of California, San Diego, February 1980.  
Dr. John Collins, Stanford University, February 1980.  
Dr. William Ham, University of Virginia, May 1980.  
Dr. Wallace Ritchie, University of Virginia, May 1980.  
Dr. B. F. Hochheimer, APL, Johns Hopkins, May 1980.  
Dr. Richard Farrell, APL, Johns Hopkins, May 1980.  
Dr. Douglas Wilmore, Harvard University, June 1980.  
Dr. John Mannick, Harvard University, June 1980.  
Dr. Herbert Hechtman, Harvard University, June 1980.  
Dr. Lawrence Cerny, Masonic Research Institute, June 1980.  
Dr. Ann Bjornson, University of Cincinnati, June 1980.

6. The Resources Management Group served as action office for the Institute on site manpower survey from 7-18 Jan 80. Key effects of the survey were:

a. Abolition of the Division of Nutrition Technology.

b. Creation of the Toxicology Services Group in the Division of Research Support.

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c. Transfer of the Operating Room Support Group from the Division of Surgery to the Division of Research Support.

d. Creation of the position of Toxicology Project Officer for developing a possible Government Owned Contractor Operated (GOCO) toxicology program.

7. The Resources Management Group served as action office for the US Army Medical Research and Development Command Internal Review Audit conducted 11-20 Mar 80.

8. A manpower survey was performed by a USAMRDC team during the third week in Jan 80. Twenty-eight positions were recommended for the Division of Blood Research by the Commander and 26 positions were recognized by the team. Two positions, for an ILIR funded project, were not approved. An interim schedule X was submitted 13 May 80 for one officer (MS) and one enlisted person (01H). The officer slot was recognized. Work unit cost analysis (Schedule I) survey was performed on 26 Jul 80. Civilian position audits, at that time, resulted in upgrading two positions: G.L. Moore, Ph.D., DAC, GS-13, to GS-14; and P. Schmid, Ph.D., DAC, GS-11 to GS-13. In addition, subsequent civilian manpower audits have resulted in upgrading M.E. Moore, DAC, GS-09 to GS-11 and a clerk typist position, unfilled at the present time, from a GS-04 to GS-05 secretary-typist.

9. A manpower survey of the Animal Resources Group was conducted Jan 80. One 9!T Animal Care Specialist position was deleted by the survey team which reduced the Group's authorized strength to twenty-five.

10. The Radioisotope Support Group was audited three times: once by the US Army Health Services Command, once by the Nuclear Regulatory Commission, and once by LAMC Health Physics. All audits were passed satisfactorily.

11. The Activity Support Group was reviewed by the Maintenance Assistance and Inspection Team (MAIT) from the USAMRDC from 8-12 Sep 80.

#### SECTION X - CONFERENCES

1. COL L. Hagler, MC, attended the 64th Annual Meeting of the Federation of American Societies for Experimental Biology (FASEB), Anaheim, CA, 13-18 Apr 80.

2. COL A.M. Allen, MC, attended a Tropical Medicine Course as a guest speaker at the Walter Reed Army Medical Center, Washington, DC, 17-25 Aug 80 and also attended the 11th Conference on Environmental Toxicology, Dayton, OH, 17-22 Nov 80.

3. 1SG J.H. Judkins attended the USAMRDC Chief Medical NCO Mini-Conference held at USABML, Edgewood Arsenal, MD, 18-20 Mar 80, and the USAMRDC Chief Medical NCO Conference, USAMRIID, Fort Detrick, MD, 20-24 Oct 80.

4. MAJ J.L. Szurek, MS, attended the National Computer Conference in Anaheim, CA, 19-22 Nov 80, and the Quality Assurance Roundtable in Hunt Valley, MD, 9-11 Nov 80.
5. V.A. Wilhelm, DAC, GS-11, attended the Tri-Service Conference on Blood Substitutes held at Bethesda, MD, 18-19 Sep 80.
6. J.R. Neville, Ph.D., DAC, GS-14, presented a paper at the meeting of the Federation of American Societies of Experimental Biology at Anaheim, CA, 14-18 Apr 80.
7. MAJ G.L. Bennett, MS, attended the USAMRDC Comptroller Conference, Fort Detrick, MD, 11-18 May 80.
8. CPT R.W. Serenbetz, MS, 2LT M.D. Sawyers, MS, W.H. Langley, DAC, GS-11, and V.L. Gildengorin, Ph.D., DAC, GS-11, attended the regional Federal ADP Council meeting held at Treasure Island, CA, 9 Jan 80. Topics covered were security, communications, and new advances in computer technology.
9. D.A. Harris, Ph.D., DAC, GS-12, attended a conference entitled "Comp-Con 81" in San Francisco, 23-26 Feb 80.
10. CPT R.W. Serenbetz, MS, attended seminar entitled, "Data Communications Network Design," held in the Hyatt Regency Hotel, San Francisco, 9-11 Jun 80.
11. CPT R.W. Serenbetz, MS, attended a 4-day seminar conducted by Control Data Management Institute, entitled "Masters of Business Administration Strategies for Decision Making," held in the Sheraton Palace Hotel, San Francisco, 30 Sep-1 Oct 80.
12. CPT R.W. Serenbetz, MS, 2LT M.C. Sawyers, MS, and W.H. Langley, DAC, GS-11, attended the "Options of the 80s" conference sponsored by the Intergovernmental Council on the Technology of Information Processing, Emeryville, CA, 29-30 Oct 80.
13. CPT R.W. Serenbetz, MS, attended an ADP acquisition seminar in Millbrae, CA, 21-30 Oct 80.
14. V.L. Gildengorin, Ph.D., DAC, GS-11, attended the Twenty-Sixth Conference on the Design of Experiments in Army Research, Development and Testing at Las Cruces, NM, 21-25 Oct 80, the Annual Meeting of the American Statistical Association of Houston, TX, 10-15 Aug 80, and several regional American Statistical Association meetings.
15. COL E.S. Beatrice, MC, LTC M. Belkin, MC, Israeli Defense Force, MAJ P.A. O'Mara, MS, B.E. Stuck, DAC, GS-12, LTC J.F. Weiss, MC, presented papers and SP5 P.J. Knowles, SP5 J.W. Molchany, SFC E. Rodriguez, SP5 A.M. Knepp, SP6 G.W. DeVillez, SP5 P. Nakamura, SP5 M. Freeman, K.R. Bloom, B.S., DAC, GS-11, and V. Pribyl, DAC, GS-11, also attended the Combat Ocular Problems and Night Vision Conference at LAIR, San Francisco, 20-21 Oct 80.

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16. B.E. Stuck, DAC, GS-12, presented papers at the Society of Photo-Optical Instrumentation Engineers Symposium, Washington, DC, Apr 80; the Association for Research in Vision and Ophthalmology Conference, Orlando, FL, Jun 80; and the Conference of Foreign Intelligence Officers and Threat Managers, TRADOC/DARCOM, Ft. Monroe, VA, Oct 80.
17. D.J. Lund, B.S., DAC, GS-12, attended the Society of Photo-Optical Instrumentation Engineers Conference on Electronic Optics, San Diego, CA, Aug 80.
18. SP5 S.R. Velez attended a Toxicology Seminar at the University of San Francisco, San Francisco, Jun 80.
19. MAJ P.S. O'Mara, MS, presented a paper at the 1980 Army Science Conference, West Point, NY, Jun 80.
20. D.I. Randolph, Ph.D., DAC, GS-13, presented a paper at the Gordon Research Conference on Lasers in Medicine, Lebanon, NH, 23-27 Jun 80; and attended a conference at NASA-Ames, Moffett Field, CA, 6 Nov 80.
21. C.W. Van Sice, DAC, GS-11, attended the Western Electronic Conferences, Anaheim, CA, 16-18 Sep 80; and the Semicon/West Conference, San Mateo, CA, 20-22 May 80.
22. LTC J.F. Weiss, MC, attended the Glaucoma Conference, San Francisco, 6-7 Feb 80; the Highlights of Ophthalmology Conference, San Francisco, 19-21 Jun 80, the Phacofragmentation Convention, San Francisco, 6-7 Mar 80; the American Academy of Ophthalmology Meeting, Chicago, IL, 5-9 Nov 80; the Visiting Professor Conference, Diseases and Surgery of Vitreous and Retina, San Francisco, 25-26 Sep 80; and the Medical Consequences of Nuclear Weapons and Nuclear War Conference, San Francisco, 17-18 Nov 80.
23. LTC M. Belkin, MC, Israeli Defense Force, attended the FORSCOM Conference on Chemical Warfare at the Chemical Systems Laboratory, Aberdeen, MD, Oct 80, and presented a paper entitled "The IDF Medical Doctrine in the Chemical Battlefield"; the Gordon Conference on Lasers in Biology and Medicine, Lebanon, NH, 23-27 Jun 80; the Military Optometrists Conference, Denver, CO, 6-9 Oct 80, and presented a paper entitled "Ocular War Injuries and Their Prevention"; and the American Academy of Ophthalmology Meeting, Chicago, IL, 3-7 Nov 80.
24. SP5 P.J. Knowles attended the American Academy of Ophthalmology Meeting, Chicago, IL, 1-7 Nov 80.
25. SP5 A.M. Knepp attended a workshop on Particle Radiotherapy and Radiobiology of the Eye at the Lawrence Berkeley Laboratory, Livermore, CA, Aug 80.
26. SP6 G.W. DeVillez attended the Eye Pathology and Anatomy Conference, American Registry of Pathology, Washington, DC, 13-14 Sep 80; and the Annual Meeting of the Northern California Society for Electron Microscopy at LAIR, San Francisco, 6 Dec 80.

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27. SP5 M. Freeman attended the Semicon/West Conference, San Mateo, CA, 20 May 80.
28. K.R. Bloom, DAC, GS-11, presented papers at the Optical Society of America: Topical Meeting on Recent Advances in Vision, Sarasota, FL, 28-Apr-2 May 80; and the Association for Research in Vision and Ophthalmology Conference, Orlando, FL, 3-8 May 80.
29. COL E.S. Beatrice, MC, presented papers at the Annual Meeting of the Aerospace Medical Association, Anaheim, CA, 14-15 May 80.
30. H. Zwick, Ph.D., DAC, GS-14, presented papers at the Association for Research in Vision and Ophthalmology Conference, Sarasota, FL, 28 Apr-2 May 80; the Gordon Research Conference on Lasers in Medicine, Lebanon, NH, 23-27 Jun 80; the NATO/AGARD Aerospace Medical Panel Specialists' Meeting, Toronto, Canada, 15-19 Sep 80; the Human Factors Society Meeting, Los Angeles, CA, Nov 80; the 1980 Army Science Conference, West Point, NY, Jun 80; and the Society of Photo-Optical Instrumentation Engineers Conference, San Diego, CA, Aug 80.
31. L.C. Rutledge, DAC, GS-13, attended the American Society for Testing and Materials, Philadelphia, PA, 6-10 Oct 80.
32. CPT R.A. Wirtz, MS, LT M.D. Buescher, MS and L.C. Rutledge, DAC, GS-13, attended the Northern California Entomology Club, 1 Feb and 7 Nov 80.
33. G.J. Klain, Ph.D., DAC, GS-15, attended the Annual Meeting of the American Society for Experimental Biology and Medicine, Anaheim, CA, 13-17 Apr 80.
34. G.J. Klain, Ph.D., DAC, GS-15 and CPT W.G. Reifenrath, MS, attended the Symposium on Toxic Substances Control: Decontamination, Columbus, OH, 21-24 Apr 80.
35. G.J. Klain, Ph.D., DAC, GS-15, attended the Defense against Chemical Agents, Sheraton International Conference Center, Reston, VA, 12-15 Nov 80; Fourth Annual CSL Program Review, Edgewood, MD, 18-19 Nov 80.
36. W.G. Reifenrath, Ph.D., DAC, GS-13, attended the NATO RSG-3 Workshop/TTCP Meeting, State Department, Washington, DC, 27-31 Oct 80.
37. LTC K.E. Black, MC, attended the Annual Meeting of American Academy of Dermatology, New York, NY, 5-12 Dec 80.
38. COL R.H. Herman, MC, CPT R.L. Scott, MS, J.P. Hannon, Ph.D., DAC, GS-15, and SP5 M.O. Baysinger attended the annual meetings of the Federation of American Societies for Experimental Biology, Anaheim, CA, 13-21 Apr 80. S.T. Ormrod, Ph.D., DAC, GS-11, presented a paper.

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39. COL R.H. Herman, MC, attended the annual meetings of the American Society of Clinical Nutrition, American Association of Physicians, American Society of Clinical Investigation, and the American Federation of Clinical Research, Washington, DC, 7-12 May 80, and also attended the annual meeting of the Central Society for Clinical Research, Chicago, IL, 5-8 Nov 80.

40. COL R.F. Bellamy, MC, attended the annual meeting of the American Association for Thoracic Surgery, San Francisco, 28-30 Apr 80.

41. COL R.F. Bellamy, MC, and MAJ L.W. Traverso, MC, attended the 1980 Clinical Congress of the American College of Surgeons, Chicago, IL, 5-8 Nov 80.

42. MAJ L.W. Traverso, MC, and MAJ R.E. Morris, MC, attended the annual meeting of the American Gastroenterological Association, Salt Lake City, UT, 17-22 May 80. MAJ L.W. Traverso presented a paper.

43. CPT D.G. Griffin, MC, attended the 1980 Western States Veterinary Conference, Las Vegas, NV, 17-22 Feb 80.

44. CPT R.L. Scott, MS, attended the annual meeting of the American Society of Parenteral and Enteral Nutrition, Chicago, IL, 30 Jan-2 Feb 80, and the First International Autotransfusion Symposium, Baltimore, MD, 23-26 Apr 80.

45. J.M. O'Bearry, Ph.D., DAC, GS-11, and S.T. Omaye, Ph.D., DAC, GS-11, attended the annual meeting of the American Association for the Advancement of Science, San Francisco, 2-9 Jan 80.

46. M.J. O'Bearry, Ph.D., DAC, GS-11, attended workshops in Immunocytochemistry and Autoradiography, the Antimicrobial Society, New Orleans, LA, Apr 80.

47. Dr. J.L. Neeth, attended the Canine Electron Microscopy 1980 Meeting, Orlando, FL, 1-4 Apr 80.

48. Dr. K. Bell, MC, Major, Cannon, MC, and F. De Venuto, Ph.D., DAC, GS-11, attended the course on Current Concepts of Combat Casualty Hemostasis, Fort Detrick, MD, 20-24 Sep 80.

49. Dr. J. L. Neeth, MC, Captain, Major, Dr. Moore, Ph.D., DAC, GS-14, and Dr. J. Morris, MC, Captain, attended the Annual meeting of American Association of Animal Health Veterinarians, 10-14 Nov 80.

50. Dr. J. L. Neeth, MC, attended the 26th European Meeting of Meat Research, Copenhagen, Denmark, 10-14 Aug 80.

51. Dr. J. L. Neeth, MC, attended the Annual Military Entomologist Meeting, Fort Detrick, MD, 20-24 Aug 80 during the XVI International Congress of Entomology, 1980, 1980, attending the annual meeting of the Entomological Society of America, Meeting, 1980, 1980, and

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made an on site visit to the Drosophila Laboratory at Louisiana State University, Baton Rouge, LA , 12-15 Dec 80.

52. LTC P.W. Mellick, VC, attended the 11th Annual Conference on Environmental Toxicology in Dayton, Ohio, 17-19 Nov 80. He presented a poster session entitled, "Morphologic Methods for Evaluating Pulmonary Damage."

53. LTC P.W. Mellick, VC, and CPT M.J. Langford, VC, attended the Annual Meeting of the American College of Veterinary Pathologists in New Orleans, LA, 2-6 Dec 80.

54. CPT M.J. Langford, VC, attended the Annual Meeting of the American Veterinary Medical Association, 21-24 Jul 80, Washington, DC, and the annual meeting of the American Society for Veterinary Clinical Pathology, 18-21 Jul 80.

55. CPT J.R. Matlack, MS, CPT J.C. Turnier, VC, and CPT M.J. Langford, VC, attended the Western Veterinary Pathology Conference in Palo Alto, CA, 23-24 Aug 80. CPT J.R. Matlack, MS, presented a paper.

56. LTC J.A. Goldsboro, VC, attended the 15th Annual Veterinary Medical Symposium, Tuskegee Institute, AL, 29 Mar-1 Apr 80.

57. CPT J.A. Kersing, VT, and CPT J. Sudduth, VC, attended the American Animal Hospital Association Conference, Los Angeles, CA., 19-25 Apr 80.

58. MAJ F.W. Askew, MS, attended the meeting of the Federation of American Society for Experimental Biology held at Anaheim, CA, 13-17 Apr 80.

59. MAJ R.S. Dixon, VC, attended the Annual Meeting of American College of Veterinary Surgeons, 4-6 Feb 80.

60. LA. Lillietson, DACV, 2-17, attended the Federation Societies for Experimental Biology, Anaheim, CA, 13-17 Apr 80.

61. Dr. G. E. Bailey, PhD, MS, attended the Fiberline 80, Workshop on Nutritional Methodology and Criteria for Assessing Nutritional Status, Mt. Laurel, NJ, 10-12 Apr 80.

62. Dr. J. M. Dowdy, PhD, MS, 14-18, attended meetings of Federation of Societies for Experimental Biology in Anaheim, CA, 13-17 Apr 80.

63. Dr. M. Lewis, PhD, 14-18, presented a paper at the Federation of Societies for Experimental Biology in Anaheim, CA, 13-17 Apr 80.

64. Dr. M. Lewis presented a paper at the Federation of Societies of Experimental Biology, Anaheim, CA, 13-17 Apr 80.

65. Dr. M. Lewis presented a paper at the Federation of Societies of Experimental Biology, Anaheim, CA, 13-17 Apr 80.

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#### SECTION XI - LIAISON AND ORIENTATION VISITS

1. The following personnel visited LAIR for orientation visits upon the assumption of their duties with 6th US Army, Presidio of San Francisco, (PSF), CA:

a. LTG Charles M. Hall, Commanding General, 6th US Army, PSF.

b. BG Robert S. Young, Chief of Staff, 6th US Army, PSF.

2. BG G. Rapmund, Commanding General, USAMRDC, made several visits to LAIR during the calendar year in conjunction with conferences, meetings, and official visits that were being conducted at LAIR.

3. SGM R.A. Falconi, HQ, USAMRDC, visited the Enlisted Detachment, 8-10 Sep 80.

4. The Task Force on Nutrition Needs of DOD met at LAIR on 11 Apr 80 for the purpose of obtaining a historical perspective of the nutrition research conducted at LAIR over the last several years.

5. COL A.M. Allen, MC, made the following liaison visits concerning the LAIR Toxicology Program:

a. To Ft. Detrick, MD, where he briefed the Commanding General, USAMRDC, and staff on the LAIR Toxicology Program, and conferred with Preventive Medicine personnel at the Surgeon General Office, Washington, DC, on toxicology testing requirements, 9-14 Sep 80.

b. To Pine Bluff, AR, 1-2 Oct 80; Houston, TX, 2-3 Oct 80; Albuquerque, NM, 3-4 Oct 80; Wright-Patterson AFB, OH, 7-8 Oct 80; and Triangle Park, NC, 9-10 Oct 80, which have Government Owned - Contractor Operated (GOCO) toxicology testing facilities.

c. To Anaheim, CA, GOCO toxicology testing facility, 27-30 Oct 80.

6. J.R. Neville, Ph.D., DAB, CS-1+, attended the USAMRDC Pharmacology Advisory Subcommittee meeting at WRAIR, May 80; he also consulted with Mr. J.W. Noyes, Associate Director, WRAIR, regarding the USAMRDC toxicology contract, 1980.

7. Mr. J. Scott, Accounting Policy Officer, USAMRDC, conducted liaison visits with LAIR and Presidio of San Francisco Finance personnel in January, February, and April 80 for the purpose of coordinating the conversion of the accounting function to STANFINS.

8. Mr. C. McCreary, a representative from Tektronix, visited LAIR to discuss hardware and software requirements necessary to support the proposed acquisition of a minicomputer, 18 Jan 80.

9. Mr. G. Johnson, a representative from Distributed Data Products Corporation, visited LAIR to discuss requirements for the installation of an

uninterruptable power supply which would permit 15 minutes of continued power in the event of a utility power outage. Projected estimates were \$10,000.00 for initial engineering and design, and \$100,000.00 for the hardware.

10. M. Metler representing IPTC, Inc., demonstrated a document entry and retrieval program called TIPS to LAIR personnel, 15 Apr 80.

11. J. Kolb arrived from the Army Research Office to discuss funding of several projects slated for Information Sciences during FY 81.

12. L. Isaacson of Beckman, Inc. Visited LAIR on 21 Oct 80 to demonstrate features of the TOXSYS Gross Pathology System which included organ weight data collection and reporting functions.

13. MAJ T.J. Marciniak, MS, TRIMIS-Army, WRAMC, visited LAIR, Information Sciences Group on 20-22 Oct 80 and 10-12 Nov 80 to study the feasibility of converting the CLINFO data base management system to Data General NOVA 1220 and ECLIPSE C/330 minicomputer.

14. S. Herrick and B. Anderson from Beckman, Inc. visited LAIR on 18-21 Nov 80 and 9-12 Dec 80 to conduct further testing and installation of TOXSYS software, and to review TOXSYS related hardware and software problems detected locally.

15. V.L. Gildengorin, Ph.D., DAC, GS-11, visited Stanford University, Palo Alto, CA, to discuss problems at LAIR in the area of statistics.

16. J. Pancove, Ph.D., RCA Princeton Sarnoff Laboratories, Princeton, NJ, visited LAIR, 7 Jan 80, to discuss further development of blue LED for vision testing.

17. M. Raybourn, Ph.D., Univ. of California, Berkeley, visited LAIR, 29 Jan 80, to discuss his extramural research.

18. B. Brown, Ph.D., and G. Portnoy, Ph.D., Smith Ketterwell Institute for Visual Sciences, San Francisco, visited LAIR, 31 Jan 80, to discuss utilization and interest in blue LED.

19. LTG C. Hall, CDR, Sixth Army, PSF, toured Project BLASER, 26 Feb 80.

20. B. Hochheimer, Johns Hopkins University, Laurel, MD, visited LAIR, 26-27 Feb 80, to discuss his extramural research.

21. C. Bickert, USAECOM, Ft. Monmouth, NJ, visited LAIR, 3 Mar and 27 May 80, to discuss CO<sub>2</sub> designator.

22. COL C. Patnode, MC, TADS/PNVS, St. Louis, MO, visited LAIR, 23 Apr 80, to discuss laser protective materials.

23. COL W. DeLeuil, MC, USAMICOM, Redstone, Arsenal, AL, visited LAIR, 21 May 80, to discuss High Energy Laser Program.

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24. A. Akerman, Martin Marietta, Orlando, FL, visited LAIR, 23 May 80, to discuss High Energy Laser Program at Redstone Arsenal, AL, and LAIR's research.
25. A. Momburger, Northrup Corp., Anaheim, CA, visited LAIR, 28 May 80, to discuss Northrop research contract.
26. B. Bergeron, Ph.D., and R. Farrell, Ph.D., Applied Physics Laboratory, Johns Hopkins University, Laurel, MD, visited LAIR, 19-20 Jun 80, to discuss current program.
27. J. Schwartz, USAECOM, Ft. Monmouth, NJ, and A. Akerman, Martin Marietta, Orlando, FL, visited LAIR, 22 Jul 80, to discuss Project BLASER and USAECOM Project A-813.
28. M. Hazam and R. Kershner, Andrulis Research, Bethesda, MD, visited LAIR, 25 Jul 80, to present research and development program in conjunction with HEL.
29. J. Lilly, Ph.D., USAMICOM, Redstone Arsenal, AL, visited LAIR, 6 Aug 80, to discuss Division of Biophysics research currently funded by USAMICOM.
30. COL T. Camp, MC, Manager, Research Area II, USAMRDC, Ft. Detrick, MD, visited 6 Aug 80 to meet division chiefs, receive program briefings, and review contract program.
31. J. Schwartz, USAECOM, Ft. Monmouth, NJ, visited LAIR, 10-11 Sep 80, to discuss Project A-813.
32. A. Akerman and D. Hoffman, Martin Marietta, Orlando, FL, visited LAIR, 10-11 Sep 80, to review progress in research of visual acuity and contrast sensitivity.
33. M. Wolbarsht, Ph.D., Duke University, Durham, NC, visited LAIR, 15 Sep 80, to give a presentation on "Neurophysiology of Laser Radiation on the Retina."
34. D. Sliney, USAEHA, Aberdeen Proving Ground, MD, visited LAIR, 15 Sep 80, to review MPE data for pulse repetition frequency lasers.
35. T. Kuwabara, Ph.D., National Eye Institute, NIH, Bethesda, MD, visited LAIR, 1-3 Oct and 19 Nov 80, to review pathology of gallium arsenide retinal exposures, electron microscopy of the chronic low-level argon exposure, and to recommend new experiments for FY 81 in both areas.
36. W. Spencer, M.D., and D. Leaffer, Ph.D., Pacific Medical Center, San Francisco, visited LAIR, 3 Oct 80, to meet with Division of Biophysics personnel and with T. Kuwabara, Ph.D., National Eye Institute

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NIR, Bethesda, MD, to decide how tissue will be prepared and analyzed in the new fiscal year.

37. J. Schwartz and V. Delmonte, USAECOM, Ft. Monmouth, NJ, visited LAIR, 6-7 Nov and 19 Nov 80, to discuss Project A-813.

38. D. Fried, Ph.D., Optical Sciences Group, Placenta, CA, visited LAIR, 17 Nov 80, to review his requirements as an Army Science Board member.

39. M. Raybourn, Ph.D., Univ. of California Berkeley, visited LAIR, 2 Dec 80, to discuss new contract effort.

40. MAJ G.H.G. Eisenberg, MS, visited HQ, USAMRDC and WRAIR, 18-27 Aug 80, to discuss the repellent program, the chemical defense program and personnel requirements.

41. CPT W. Reifenrath, MS, visited USA Biomedical Laboratory, Edgewood, 22-28 Jun 80, for collaboration on a study to assess diethylmalonate as a simulant for GD. While there he gave a seminar on shower decontamination of skin.

42. G.J. Klain, Ph.D., DAC, GS-15, visited USABML, Edgewood, MD, 17 Nov 80, for project coordination for skin research.

43. P. Schmid, Ph.D., DAC, GS-13 visited Stanford Research Institute, Menlo Park, CA, 21 Oct 80, to discuss cooperative work in chemical defense and radioisotope synthesis.

44. W.O. Berry, Ph.D., Program Manager, Director of Life Science, Air Force Office of Scientific Research, Bolling AFB, Washington DC, visited the Division of Cutaneous Hazards, 13 Aug 80, to discuss basic research.

45. S. Holmes, Division of Tropical Medicine, Columbia University, New York, NY visited the Division of Cutaneous Hazards, 15 Nov 80, to discuss a project on Leishmaniasis.

46. R. Endris, Univ. of Florida, visited the Division of Cutaneous Hazards, 4 Jan 80, to discuss medical entomology and development of repellents.

47. Dr. E.E. Davis, Stanford Research Institute visited the Division of Cutaneous Hazards, 9 Apr 80 and 5 Nov 80, to discuss medical entomology and development of repellents.

48. MAJ N.N. Heryford, MS, ACDUTRA LAMC visited the Division of Cutaneous Hazards, 9 Sep 80, to discuss medical entomology and development of repellents.

49. Dr. A.H. McCreesh, USAEHA visited the Division of Cutaneous Hazards, 7 Aug 80, to discuss medical entomology and development of repellents.

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50. P. Kahn, Cutter Laboratories, visited the Division of Cutaneous Hazards, 11 Sep 80, to discuss medical entomology and development of repellents.

51. P. Kahn and H. Hildebrandt, Cutter Laboratories, visited the Division of Cutaneous Hazards, 24 Sep 80, to discuss medical entomology and development of repellents.

52. T. Tuttle and A. Hageman, S.C. Johnson & Sons, Inc. visited the Division of Cutaneous Hazards, 25 Sep 80, to discuss medical entomology and development of repellents.

53. N.H. Euliss, Humboldt State University visited the Division of Cutaneous Hazards, 1 Oct 80, to discuss medical entomology and development of repellents.

54. Dr. J. Brohult, Karolinska Institute, Stockholm, Sweden, visited the Division of Cutaneous Hazards, 19 Nov 80, to discuss medical entomology and development of repellents.

55. Dr. R.E. Lindstrom, AFOSR/WC, Bolling AFB, Washington DC, visited the Division of Cutaneous Hazards, 17 Dec 80, to discuss basic research in chemical defense.

56. MAJ G.H.G. Eisenberg, MS, G.J. Klain, Ph.D., DAC, GS-15 and W.G. Reifenrath, Ph.D., DAC, GS-13, visited SRI International, 15 Dec 80, to discuss basic research in chemical defense.

57. MAJ R.E. Burr, MC, visited the Division of Surgery to discuss current projects and operations within the division, 10-11 Dec 80.

58. COL R.F. Bellamy, MC, performed two site visits for the purpose of determining the status of two USAMRDC contracts: Department of Medicine, Physiology, and Surgery, University of Mississippi Medical Center, Jackson, Mississippi, 29 Sep 80; and Duke University Medical Center, Durham, North Carolina, 24 Oct 80.

59. The following individuals visited the Division of Blood Research:

a. BG G. Rappmund, MC, Commander, USAMRDC, Ft. Detrick, Frederick, MD, 22-23 Sep 80.

b. COL T. Camp, MC, USAMRDC, Ft. Detrick, Frederick, MD, 14 Aug 80.

c. F. Behal, Ph.D., Texas Tech University, Amarillo, TX, 11-15 Feb 80.

d. R.B. Dawson, M.D., University of Maryland, Baltimore, MD, 17 Apr 80.

e. C.A. Hunt, Ph.D., University of California, San Francisco, 3 Apr 80.

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f. A. Sacks, Ph.D., Medical Institute of Research, San Jose, CA, 16 Oct 80.

g. M. Wiener, M.D., Merrill Research Center, Boston, MA, 13 May 80.

h. J. McCue, Ph.D., Gibson Institute, San Diego, CA, 12 Jun 80.

i. W. Davisson, Fenwal Laboratories, Morton Grove, IL, 17 Dec 80.

j. COL R. Laird, MC, MOB DES, Lansing, MI, 14-25 Apr 80.

60. LTC T. Keefe, VC, a consultant for Veterinary Laboratory Services visited the Toxicology Group pertaining to mutual support in July 1980.

61. LTC D. Hilmas, VC, and MAJ F. Chapple, MRDC, visited the Toxicology Group regarding the antimetabolite and mutagenity studies of irradiated food, Feb 80.

62. Dr. Arther McCreesh, Chief, Toxicology Division, US Army Environmental Hygiene Agency visited LAIR, 11-12 Aug 80, to discuss topics of mutual interest between LAIR and USAEHA.

63. LTC P. W. Mellick, VC, visited the Headquarters, USAMRDC, Ft. Detrick, MD, 22 May 80. During that visit he was briefed on the program to establish government-owned contractor-operated toxicology testing facility in the command.

64. LTC P. Mellick, VC, B. Schwartz, Ph.D., DAC, GS-12, E. McGown, Ph.D., DAC, GS-13, and SP5 M. Rusnak, visited the California Primate Research Center, Univ. of California, Davis, 10 Jul 80. The purpose of the visit was to consult with Dr. Lester Schwartz on techniques, methodology and the state of the art regarding in vitro toxicology screening using mammalian tissue and oxygen cultured systems.

65. Dr. J. Anderson, California Primate Research Center, Univ. of California, Davis, toured the Animal Resources Group facilities and Primate colony, 28 Nov 80.

#### SECTION XII - UNRESOLVED PROBLEMS

1. Expansion of computer hardware and software capabilities and current manpower levels within the Information Sciences Group indicates that we must require additional personnel and support if we are to keep up with current and projected demands. Programming assistance is required for the Applications and Biometrics Teams. The Technology Team requires assistance in the area of hardware and should be augmented with one person having data communications experience. We are currently supporting over 50 peripheral devices on one C/320 inhouse minicomputer. With a new mainframe acquisition and requirements to support two systems and over 75 devices, it is evident that we will surely fall short of being able

to service adequately our subscribers by the end of CY 81 if current staffing levels persist.

2. The problem of clean uninterruptable power remains. The expense associated with an uninterruptable power source is being examined. Clean, isolated, and well-regulated power source is essential. The engineering and installation plans are expected to be resolved in CY 81.

3. Installation of the large fume hood in LR1126 is needed badly for chemical defense research requiring use of organophosphate simulants of nerve agents.

4. Constant construction prevents the use of certain scientific instruments in the Research Support area.

5. Rapid growth within the Division of Blood Research is resulting in limited space. Office space is non-existent for future needs (physician projected for Sep 81) and laboratory space is becoming crowded.

6. The lack of an automated data management system for tabulating and analyzing pathology data generated by toxicology studies may propose a major problem if large-scale long-term testing is to be done. Extended efforts to identify suitable systems that are readily available from commercial sources have failed. At this time an attempt to develop a complete system using inhouse personnel and facilities is considered too costly in money, manpower, and time. Therefore, pathology data from toxicology studies must be tabulated manually, a procedure which may compromise accuracy and which will extend considerably the time required to complete these studies.

7. During May 79, the facilities of the Pathology Services Group were relocated within the LAIR building. The Hitachi Electron Microscope was moved from the second floor Phase I to the first floor Phase III. The room currently occupied by this microscope requires considerable refurbishing before this instrument can be made completely operable. The lack in inhouse personnel for making these improvements and lack of funding for construction impeded progress on this problem.

8. Personnel shortages continue to be the major unresolved problem in the Animal Resources Group. There are currently five 91T positions and four civilian animal caretaker positions vacant. With an increasing daily animal population it has become extremely difficult to provide daily maintenance and weekend care with the number of personnel assigned. Absences due to leave, illness, and other duties have severely hampered the Group's ability to provide the type of support LAIR/LAMC investigators have enjoyed in the past.

9. Replacement/repair of the floor in the cage washing area has yet to be accomplished. "Pot-holes" in the concrete floor are a major safety hazard. Patchwork filling of the holes has given temporary relief.

However, repair of this area may become a major factor in retaining AAALAC accreditation in the future.

10. Surgical research would be facilitated by dividing the one large operating room suite into three or four small operating room suites. This might be accomplished by sliding in walls since the large suite is functionally arranged into four suites at the present time. The primary difficulty at this time is contamination of a "clean" surgical case by a "dirty case" on the adjacent operating table.

11. The loss of critical positions during 79 has continued to hamper the operations of the Activity Support Group, Logistics Division. In particular, fabrication and installation projects must be performed by outside agencies. The work must now be done by contract at a loss of time and at a greater cost. The loss of the engineering technician from the group, in particular, has caused the abandonment of attempts to keep the building master drawing set updated. The result has been that many ongoing building changes and utility changes are not being recorded or the master drawing set. The loss of the engineering technician has caused lost time in minor design projects, and in preparation of job sketches, specifications and work statements.

12. The LAIR budget cutbacks for FY 81 have resulted in the reduction of some contract services. The following cutbacks are proposed in the existing service areas:

a. Building Maintenance Contract	\$75,000	Reduction
b. Honeywell Maintenance Contract	\$20,000	Reduction
c. Custodial Contract	\$100,000	Reduction
d. Equipment Service Contract	\$8,000	Reduction

#### SECTION XIII - OTHER

1. Beginning in Apr 80, the Resources Management Group has been supported by a GAO contractor in computer programming. The contractor effected data conversion to STANFINS and is currently working on an RDT&E unique accounting requirements package that will effect, through STANFINS, overhead distribution, labor distribution, commitment accounting, chargebacks, and manpower reporting requirements.
2. 2LT M.C. Sawyers, MS, obtained the Expert Field Medical Badge (EFMB), by attendance and participation in a program designed for this training, 4-16 Nov 79, Ft. Ord, CA, and received the airborne badge through training conducted at Ft. Benning, GA, 3 Jul-3 Aug 80.
3. CPT R.S. Scott, MS, was a candidate for the NASA Space Shuttle Program.

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4. SP5 M.O. Baysinger represented LAIR in the USAMRDC Soldier of the Year competition.

5. LTC P.B. Jennings, VC, serves as OTSG Consultant in Veterinary Surgery.

6. LTC P.B. Jennings, VC, and MAJ R.S. Dixon, VC, successfully passed the California Veterinary Board Examination in January and received their California Veterinary Licenses.

7. SGT P.E. Klaus was promoted to E7.

8. LTC J.T. Fruin, VC, was reappointed consultant to The Surgeon General for Food Hygiene, FY 81.

9. Five thousand four hundred and sixty-nine square feet of animal space was released to USDA in addition to the 1,059 square feet of animal space released to the Sixth Army Medical Laboratory. The Animal Resources Group, during this report period relinquished control of the entire fourth floor of the research support wing of the LAIR, 6,528 square feet of animal space.

11. The disposal of radioactive waste material continues to be a problem due to lack of receiving facilities and a waste burial contract.

## SECTION XIV - PUBLICATIONS

MATERIAL PUBLISHED BY PERSONNEL OF THE LABORATORY FOR CY 1980

LETTERMAN ARMY INSTITUTE OF RESEARCH  
PRESIDIO OF SAN FRANCISCO, CA  
INSTITUTE REPORTS

- 82 STAMPER, D.A., P.A. O'MARA, E.S. BEATRICE, and D.J. LUND. Tracking performance with a viscous-damped mount under simulated conditions of varied ambient light levels and target velocities. January 1980
- 83 TREVINO, G.S., J.H. SKALA, R.S. DEMAREE, J.G. MILLER, B.V. SANDERS, T.A. O'DONNELL, and J.E. CANHAM. Nutrition studies in military German shepherds consuming three commercial rations for thirty-five months with various levels of physical activity. June 1980
- 84 SAYER, W.J. An indoor air pollution survey at the partially constructed Letterman Army Institute of Research. Areas of indoor air pollution which exist at LAIR and which warrant further study. July 1980
- 85 DeVENUTO, F., A.I. ZEGNA, K.K. BUSSE, and C.C. PECK. Evaluation of a reverse osmosis apparatus for field production of USP grade injectable water from sea water, pond water, and human urine. July 1980
- 86 REIFENRATH, W.G. Shower decontamination efficacy in vitro determinations. Final Report. August 1980
- 87 McGOWN, E.L., C.M. LEWIS, A. ROBLES, P.P. WARING, J.H. SKALA, and V.L. GILDENGORIN. Investigation of possible antivitamin B-6 properties in irradiation sterilized chicken. (In press)
- 88 O'MARA, P.A., D.A. STAMPER, D.J. LUND, and E.S. BEATRICE. Chromatic strobe flash disruption of pursuit tracking performance. November 1980
- 89 ASKEW, E.W. Influence of nutritional factors on lipid metabolism. December 1980

## TECHNICAL NOTES

- 13 DONG, M.H., E.L. McGOWN, P.P. WARING, J.H. SKALA, and H.E. SAUBERLICH. Purification of transketolase from human erythrocytes. I. Using solvent denaturation as the initial step. July 1980
- 14 OMAYE, S.T., R.A. WIRTZ, L.S. GUTHERTZ, P.C. TAYLOR, and J.T. FRUIN. Hematologic and selected hepatic changes produced by substituted *p*-benzoquinones in the rat. July 1980
- 15 UNRUH, K., M.E. LEDFORD, A. ZEGNA, M. WONG, and G.L. MOORE. Adaptation of the biotonometry  $P_{50}$  techniques to the IL model 213 blood gas analyzer. October 1980

## PAPERS IN MEDICAL AND SCIENTIFIC BOOKS/JOURNALS

- 80-005 SAUBERLICH, H.E., Y.F. HERMAN, C.O. STEVENS, and R.H. HERMAN. Thiamin requirement of the adult human. Am J Clin Nutr 32: 2237-2248, 1979
- 80-006 BIKLE, D.D., R.L. MORRISSEY, and D.T. ZOLOCK. The mechanism of vitamin D in the intestine. Am J Clin Nutr 32: 2322-2338 1979
- 80-007 PECK, C.C., and B.B. BARRETT. Nonlinear least-squares regression programs for microcomputers. J Pharmacokinet Biopharm 7: 537-541, 1979
- 80-008 MILNE, D.B., D.D. SCHNAKENBERG, H.L. JOHNSON, and G.L. KUHL. Trace mineral intake of enlisted military personnel. J Am Diet Assoc 76: 41-44, 1980
- 80-009 ASKEW, E.W., G.L. DOHM, P.C. WEISER, R.L. HUSTON, and W.H. DOUB, JR. Supplemental dietary carnitine and lipid metabolism in exercising rats. Nutr Metab 24: 32-42, 1980
- 80-010 DONG, M.H., E.L. McGOWN, B.W. SCHWENNEKER, and H.E. SAUBERLICH. Thiamin, riboflavin, and vitamin B<sub>6</sub> contents of selected foods as served. J Am Diet Assoc 72: 156-160 1980
- 80-011 HAGLER, L., R.I. COPPES, E.W. ASKEW, A.L. HECKER, and R.H. HERMAN. The influence of exercise and diet on myoglobin and metmyoglobin reductase in the rat. J Lab Clin Med 95: 222-230, 1980

- 80-012 GREENBERG, J.H., and S. KERBS. Cutaneous basophilic hypersensitivity response to fungal antigens in guinea pigs. *J Invest Dermatol* 74: 26-28, 1980
- 80-013 STAMPLER, D.A., R.T. STEINER, and S.M. ROBINSON. Evaluation of an acute mountain sickness questionnaire: Effects of intermediate-altitude staging upon subjective symptomatology. *Aviat Space Environ Med* 51: 379-387, 1980
- 80-014 STUCK, B.E., and D.J. LUND. Extrapolation of pulsed light data in scanned displays. *SPIL J* 162: 107-111, 1978
- 80-015 FRUIN, J.T., and L.S. GUTHLERTZ. A zoonotic disease organism newly recognized agent of gastroenteritis: Campylobacter fetus subsp jejuni. In: Memorandum for Each Army Veterinary Corps Officer, Letter of March 1980, Subject: Army Veterinary Corps Information (2-80) 3 pp
- 80-016 OMAYE, S.T., and J.D. TURNBULL. Degradation of cytochrome P-450 heme in ascorbic acid-deficient guinea pigs. *Biochem Pharmacol* 28: 3651-3657, 1979
- 80-017 MOORE, G.L., M.E. LEDFORD, M.R. BRUMMELL, and D.F. BROOKS. The potential use of dihydroxyacetone for improved 2,3-DPG maintenance in red blood cell storage: Solution stability and use in packed cell storage. *Transfusion* 20: 79-86, 1980
- 80-018 CABAUD, H.E., A. CHATTY, V. GILDENGORIN, and R.J. FELTMAN. Exercise effects on the strength of the rat anterior cruciate ligament. *Am J Sports Med* 8: 79-86, 1980
- 80-019 TURNBULL, J.D., and S.T. OMAYE. Synthesis of cytochrome P-450 heme in ascorbic acid-deficient guinea pigs. *Biochem Pharmacol* 29: 1255-1260, 1980
- 80-020 FRIEDMAN, H.I. Cellular mechanisms of secretion. Chapter 12. In: Principles of Metabolic Control in Mammalian Systems, edited by R.H. Herman, R.M. Cohn, and P.D. McNamara. New York: Plenum Press, 1980
- 80-021 ALLEN, A.M. Clinical trials in dermatology, Part 3: Measuring responses to treatment. *Int J Dermatol* 19: 1-6, 1980
- 80-022 OMAYE, S.T., M.D. GREEN, J.D. TURNBULL, W.H. AMOS, and H.E. SAUBERLICH. Influence of ascorbic acid and erythorbic acid on drug metabolism in the cynomolgus monkey. *J Clin Pharmacol* 20: 172-183, 1980

- 80-023 GREEN, M.D., and S.T. OMAYE. Thermoregulation in scorbutic guinea pigs. Proc West Pharmacol Soc 23: 215-218, 1980
- 80-024 WATSON, L.C., and R. GOMEZ. Effect of hydrocortisone on gastric acid secretion and plasma amino acids in dogs. Surg Forum 30: 343-344, 1979
- 80-025 BIKLE, D.D., E.W. ASKEW, D.T. ZOLOCK, R.L. MORRISSEY, and R.H. HERMAN. Calcium accumulation by chick intestinal mitochondria regulation by vitamin D<sub>3</sub> and 1,25-dihydroxy-vitamin D<sub>3</sub>. Biochim Biophys Acta 598: 561-574, 1980
- 80-026 GREEN, M.D., J. HAWKINS, and S. OMAYE. Effect of scurvy on reserpine induced hypothermia in the guinea pig. Life Sci 27: 111-116, 1980
- 80-027 CABAUD, H.E., W.G. RODKEY, and H.R. McCARROLL. Peripheral nerve injuries: Studies in higher nonhuman primates. J Hand Surg 5: 201-206, 1980
- 80-028 OMAYE, S.T., R.A. WIRTZ, and J.T. FRUIN. Toxicity of selected compounds found in the secretion of Tenebrionid flour beetles. J Food Safety 2: 97-103, 1980
- 80-029 WIRTZ, R.A., and L.C. RUTLEDGE. Reconstituted collagen sausage casings for the blood feeding of mosquitoes. Mosq News 40: 287-288, 1980
- 80-030 BIKLE, D.D., E.M. SPENCER, W.H. BURKE, and C.R. ROST. Pro-lactin but not growth hormone stimulates 1,25 dihydroxy-vitamin D<sub>3</sub> production by chick renal preparations in vitro. Endocrinology 107: 81-84, 1980
- 80-031 RAICA, N., E.L. McGOWN, and D.E. HILMAS. The absence of antithiamin factors in radappertized beef and chicken. (Abstract No. 17 for Food Irradiation Poster Session) In: Volume of Abstracts, 26th European Meeting of Meat Research Workers, International Meat Research Congress, (Colorado Springs, Colorado, 31 August - 5 September 1980)
- 80-032 FRUIN, J.T., C.D. KUZDAS, and L.S. GUTHERTZ. Mutagenicity studies with irradiated meats. (Abstract No. 20 for Food Irradiation Poster Session) In: Volume of Abstracts, 26th European Meeting of Meat Research Workers, International Meat Research Congress, (Colorado Springs, Colorado, 31 August - 5 September 1980)

- 80-033 MOORE, GENE, H.E. LINDFORD, and G.C. FICK. The in vitro evaluation of modifications in citrulline anticoagulated preserved blood at various hematocrits. *Transfusion* 20: 419-426, 1980.
- 80-034 BOLIN, R.B., B.A. CHALMERS, G.A. SIMPLIFIANO, and G.C. FICK. In vitro evaluation of platelets stored in citrulline formulations. *Transfusion* 20: 427-435, 1980.
- 80-035 KRUEGER, G.V., and K.W. MINTABERG. Alteration of red cell growth equilibrium by supernatants of peripheral blood mononuclear cells from normal and ascorbate subjects. *J Invest Dermatol* 74: 146-149, 1980.
- 80-036 SCHUSCHERBA, G., and H. WIRZ. The striated rootlet system of primate rods. Candidate for active photoreceptor alignment. (Abstract No. 14) In: Recent Advances in Vision. Digest of technical papers presented at the Optical Meeting on Recent Advances in Vision, (Sarasota, Florida), 3 April - 3 May 1980.
- 80-037 BLOOM, K.R., and H. ZWICK. Rhesus spectral dynamic visual acuity. (Abstract No. WA1) In: Recent Advances in Vision. Digest of technical papers presented at the Optical Meeting on Recent Advances in Vision, (Sarasota, Florida), 3 April - 3 May 1980.
- 80-038 WIRZ, R.A. Occupational allergies to arthropods. Documentation and prevention. *Bull Entomol Soc Am* 26: 356-360, 1980.
- 80-039 ZWICK, H., D. LUND, and C. VAN SICK. A "blue" LED for visual sensitivity testing. (Abstract 6) *Invest Ophthalmol Visual Sci* 19: 120, 1980.
- 80-040 ROBBINS, D., H. ZWICK, and M. RAENLEIN. Changes in spectral acuity following laser irradiation. (Abstract 5) *Invest Ophthalmol Visual Sci* 19: 91, 1980.
- 80-041 STUCK, B., G. DEVILLEZ, E.S. BEATRICE, and H. ZWICK. Microscopic evaluation of rhesus retina after repeated low-level exposure to diffuse argon laser radiation. (Abstract 6) *Invest Ophthalmol Visual Sci* 19: 159, 1980.
- 80-042 BLOOM, K.R., and H. ZWICK. Rhesus spectral sensitivity for dynamic visual acuity criteria. (Abstract 16) *Invest Ophthalmol Visual Sci* 19: 212, 1980.

- 80-143 ZWICK, H., D. ROBBINS, and A. KNEPP. Effects of multiwave-length coherent exposure on optic tectal neuronal activity in pseudomys. (Abstract 36) *Invest Ophthalmol Visual Sci* 19: 286, 1980
- 80-144 BILLAMY, R.F. Calculation of coronary vascular resistance. *Circ Res* 44: 261-269, 1980
- 80-145 BILLAMY, R.F., H.S. LOWENSON, W. EHRLICH, and R.W. BAER. Effect of coronary sinus occlusion on coronary pressure-flow relations. *Am J Physiol* 239 (Heart Circ Physiol 8): H651-H654, 1980
- 80-146 BILLAMY, R.F., and H.S. LOWENSON. Effect of systole on coronary pressure-flow relations in the right ventricle of the dog. *Am J Physiol* 238 (Heart Circ Physiol 7): H651-H656, 1980
- 80-147 FEDERBERG, W.W., and G.G. KRUEGER. Monocyte chemiluminescence: Physical and biological parameters. In: Liquid Scintillation Counting Recent Applications and Development. Volume II. Sample Preparation and Applications. New York: Academic Press, Inc., 1980. pp 355-375
- 80-148 ALLEN, A.A., S.R. IRWIN, J.J. KARWACKI, and R.H. PINKERTON. Hepatitis B surface antigen and antibody in a military community during a hepatitis B epidemic. *Milit Med* 144: 597-604, 1979
- 80-149 ROBBINS, D.O., and H. ZWICK. Changes in spectral acuity following brief laser (647 nm) exposure. Chapter 2. In: Colour Vision Deficiencies V, Bristol, England: Adam Hilger Ltd., 1980. pp 106-110
- 80-150 ZWICK, H., B.E. STUCK, and L.S. BEATRICE. Low-level laser light effects. Long-term effects. In: Proceedings of the Human Factors Society, 24th Annual Meeting (Los Angeles, California, November, 1980). pp 152-156
- 80-151 IRWIN, A.A., T.B. MCGOWAN, M.G. RUSNAK, and H.L. SAUBERLICH. Interactions between folic acid and ascorbic acid in the mouse. (Abstract No. 1540) *Fed Proc* 39: 551, 1980
- 80-152 IRWIN, A.A., T.B. MCGOWAN, T.P. WARING, and H.L. SAUBERLICH. Lactate transketolase: Factors affecting enzymatic activity and activation of apoenzyme. (Abstract No. 1510) *Fed Proc* 39: 551, 1980

- 81-001 DEVENUTO, F., H.I. FRIEDMAN and P.W. MELLICK. Massive exchange transfusions with crystalline hemoglobin solution and subsequent replacement of hemoglobin and blood volume. *Surg Gynecol Obstet* 151: 361-365, 1980
- 81-002 BIKLE, D.D. Studies of the chick renal mitochondrial 25-hydroxyvitamin D<sub>3</sub> 24-Hydroxylase. *Biochim Biophys Acta* 615: 208-222, 1980
- 81-003 FRIEDMAN, H.I., and B. NYLUND. Intestinal fat digestion, absorption, and transport: a review. *Am J Clin Nutr* 33: 1108-1139, 1980
- 81-004 TILLOTSON, J.A., and R. O'CONNOR. Ascorbic acid requirements of the trained monkey as determined by blood ascorbate levels. *Int J Vitam Nutr Res* 50: 171-178, 1980
- 81-005 ALLEN, A.M. Clinical trials in dermatology. Part 4: Analysis and interpretation. *Int J Dermatol* 19: 63-70, 1980
- 81-006 TILLOTSON, J.A., and M.M. BASHOR. Fluorometric apoprotein titration of urinary riboflavin. *Anal Biochem* 107: 214-219, 1980
- 81-007 ZWICK, H., B.E. STUCK, and E.S. BEATRICE. Low-level laser effects on rhesus visual function. *SPIE J* 229: 55-62, 1980
- 81-008 RODKEY, W.G., H.E. CABAUD, and H.R. McCARROLL. Neurorrhaphy after loss of a nerve segment: comparison of epineurial suture under tension versus multiple nerve grafts. *J Hand Surg* 5: 336-371, 1980
- 81-009 STUCK, B.E., D.J. LUND, and E.S. BEATRICE. Ocular effects of laser radiation from 1.06 to 2.06  $\mu$ . *SPIE J* 229: 115-120, 1980
- 81-010 WIRTZ, R.A., D. TURRENTINE, JR., and L.C. RUTLEDGE. Mosquito area repellents: laboratory testing of candidate materials against *Aedes aegypti*. *Mosq News* 40: 432-439, 1980

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